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# THE MEDICAL JOURNAL OF AUSTRALIA



VOL. I.—14TH YEAR.

SYDNEY: SATURDAY, JANUARY 22, 1927.

No. 4.

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### PUBLIC HEALTH IN GREATER BRISBANE.<sup>1</sup>

By H. W. TILLING, M.R.C.S. (England), L.R.C.P. (London),  
Medical Officer of Health, Greater Brisbane City  
Council, Queensland.

THE merging of the twenty local authorities into one which was carried out during the latter months of last year in order to create the present area of Greater Brisbane, caused many alterations in the various departments of the Council, but one of the most important changes was undoubtedly the formation of a Department of Health.

The former local authorities had no departments of health and the method of each authority, endeavouring to carry out the provisions of the Health Acts independently and without cooperation with neighbouring authorities, was naturally not economical to the district as a whole and the best results from the public health standpoint could not be expected. The lack of uniformity and the lack

and inaccuracy of records make it impossible to form any comparative tables at the present time.

Now that the large area of the present city is under the control of one authority, there is every incentive to build up a Department of Health that will be founded on modern lines and be a credit to the State and the medical profession.

No one realizes more than myself the magnitude and importance of the task involved in forming such a departure that the new Department entails and also the great need for careful organization so that the Department will be based on sound foundations.

The development of such an activity naturally takes time and people are rather apt to be impatient, but I can assure anyone who fancies he has a grievance on this score, that the whole Department has been working at high pressure since its formation.

The present organization is represented on the accompanying chart and from it you will notice that the Department is more complex than would be considered at first thoughts.

It will be noted that thirteen main sections have been created, with three administrative positions.

<sup>1</sup> Read at a meeting of the Queensland Branch of the British Medical Association on November 5, 1926.





and Notifiable Diseases; Part III., Private Hospitals and Midwives; Part IV., Mosquitoes; Part V., Flies.

A draft of these ordinances was submitted to the Council of this Branch and their recommendations were incorporated.

Copies of these ordinances have been sent to every practitioner within the area whose name appeared on the register, but should any practitioner for any reason not have received one, I shall be glad to rectify the omission.

It has been our endeavour to make these ordinances as brief and clear as possible and to eliminate needless legal phraseology. The one idea underlying them is unification of administration. They do not pretend to be perfect, but we trust they will form a firm foundation of a really reliable and efficient health service.

As all the members have received copies of these ordinances, I will not mention them in detail, but I hope you will be free with your comments, more especially on the new items, namely: Simplicity of notification, defining the minimum isolation period for scarlet fever, inclusion of infantile diarrhoea, definition of puerperal infection, persons entitled to preside at confinements in hospitals, relative to midwives *et cetera*. Radical alterations have been avoided as much as possible.

#### General Inspectorial Section.

From the commencement of the year the staff of the General Inspectorial

Section has carried out 30,502 inspections; in connexion with these 3,764 notices for the abatement of nuisances were issued and in over 90% compliance with the notices was obtained.

#### Section of Assessments, Contracts *et cetera*.

The Section of Assessments, Contracts *et cetera* is charged with a twofold duty in reference to the cleansing services of the city; in the first place it is concerned with the details of management and accounting in connexion with the cleansing work done by contract and also that done by municipal units; it receives from the public and the inspectorial staff complaints or requests for variation, these being sent to the respective contractors or municipal units for attention. In the second place it is concerned with the duty of drafting and entering up the assessment of annual dues levied by the Council.

The work of this section has involved the laying out of a card system of upwards of 80,000 individual cards which are at all times kept posted up to date, for the necessary purposes of management and levying of dues.

#### Rat Control Section.

The Rat Control Section of the Department has been thoroughly organized and is working efficiently. The results are consistent and indicate that the measures taken are sufficient. During the ten months of this year 43,618 rats and 2,342 mice were actually destroyed and the carcasses sent to the State Health Department Laboratory for examination. None of them yielded *Bacillus pestis*. In this period also 77,000 baits were laid and these must naturally have accounted for a considerable number of rodents.

#### Entomological Section.

In April last the Entomological Section of the Council was organized for the express purpose of undertaking a permanent campaign throughout the area against mosquitoes and also for the purpose of investigating other insect pests. This, I think, is the first municipality in Australia to create such a department. The head-quarters of the section have been established in this building (the old Town Hall, South Brisbane) and a laboratory, as you have seen, has been instituted under the charge of Dr. Hamlyn Harris, who was appointed City Entomologist.

The staff consists

of an entomologist, four experienced field inspectors, a clerk and a labour squad of five men. This staff has been recently augmented by three extra men for house patrol work.

The work commenced centrally and proceeds in ever widening circles. Up to date the public breeding places within a three miles radius of the General Post Office are under control and the intensive house to house work will be commenced this month. It will give you some idea of the immensity of the task undertaken when you know that during the past seven months 52,198 breeding places have been treated. The educational side of the matter is being stressed and numerous lectures have been given to the public on the question of mosquito eradication. The means of control include oiling, poisoning,

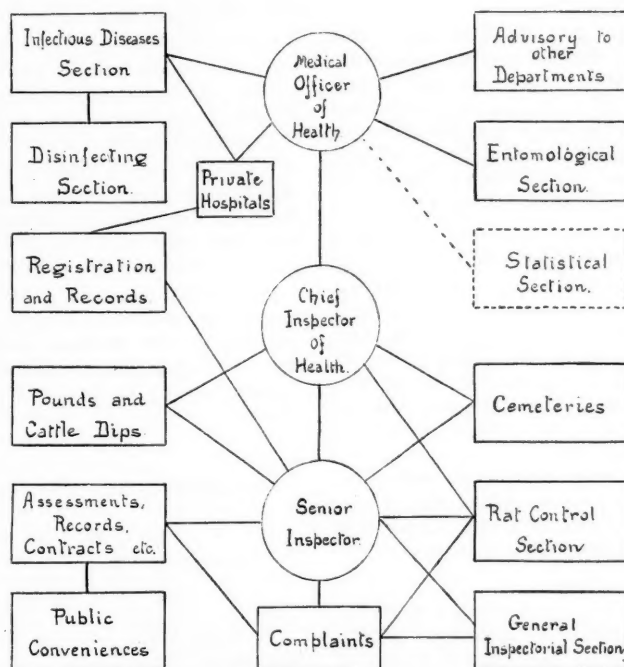


Diagram Showing Organization of Department of Health of Greater Brisbane Council.

draining, clearing and the use of fish. A comprehensive study of the habits of certain local fish is being undertaken in the laboratory, more especially with regard to their larvivorous tendencies. Up to date the results have not been very encouraging.

We have been successful in breeding the *Lebiste poikiloides* (Barbados Millions) and we hope to make field experiments with them. When opportunity offers, we hope to import some truly larvivorous fish and breed them in our own hatchery and by these means we hope to produce them in sufficient quantities to be of practical value.

Dr. Harris will later give you information on the biological side of the subject.

Before I leave the matter I would like to make a few brief remarks on the relation of the mosquitoes in our area to malaria, dengue fever and filariasis.

#### Malaria.

Regarding malaria in the Brisbane area the *Anopheles annulipes* is the recognized potential carrier of malaria. There are several other anophelines in the area, but only one, the *Anopheles bancrofti*, is, as far as is known, a possible carrier; this variety is not plentiful in the area but is widely spread in Queensland and the Northern Territory, where it undoubtedly has to be reckoned with.

*Anopheles stigmaticus* and *Anopheles atratipes*, as far as is known, are not implicated.

It seems strange that, whilst the potential carrier of malaria is so common in the area and the breeding places are becoming more widely spread the incidence of malaria is practically nil. This seems to suggest that the *Anopheles annulipes* is at the present time not infective. The frequent use of quinine and the isolation of the native races may possibly be responsible for this.

In this connexion it is interesting to note that Dr. James, of the Malaria Commission of the League of Nations, states that 95% of the potential malaria carriers are incapable of becoming infective.

#### Dengue Fever.

The most important and up to date work in recent years on the subject of dengue fever is that of Drs. Siler, Hall and Hitchens, of the United States of America Army Medical Corps, published by the Bureau of Science, Philippines, May 27, 1926.

The experimental results show that dengue fever and yellow fever are transmitted by the *Aedes argenteus* (*Stegomyia fasciata*) and by no other and that the mechanism of transmission of both is strikingly similar. Therefore control measures for the one are suitable for the other.

It was noted that the mosquitoes became infected only when feeding on a patient during the first three days of the illness. They are capable of transmitting the infection eleven days after becoming infected. When infected, they remain infective throughout life.

With regard to filariasis, the most recent researches show that the *Culex fatigans* (*Culex quinque fuscatus*) is the efficient host in Queensland of *Filaria bancrofti*. The mosquitoes are

infective in from about ten to sixteen days after feeding on an infected patient.

Partial development of filarial larvæ occurs in *Culex annulirostris*, but there is no direct evidence that this mosquito is capable of being an efficient host. *Culex annulirostris* has been observed to be the host of filaria in dogs (*Dirofilaria*).

Some varieties of mosquitoes are killed by the presence of filarial larvæ in their thorax.

#### Conclusion.

In conclusion I should like to mention that owing to pressure of work this year, I have been unable to keep as much in personal touch with practitioners as I think is necessary, but during the coming year I will make it my duty to visit as many as possible for the purpose of exchanging views and information and also to keep them *au courant* with the Council's activities.

I also hope during the coming year to issue to the Branch a short bulletin at regular intervals giving details of the work undertaken by the Municipal Health Department and any information received that is likely to be of interest to practitioners.

I should like to remind practitioners again that supplies of culture tubes both for diphtheria and infantile diarrhoea are obtainable from this building and they may be left here for transmission to the joint laboratory.

I trust the members present will take this opportunity to comment freely on and criticize constructively the working and organization of this Health Department. I will also be glad to endeavour to elucidate any points that may not be clear.

#### THE BIOLOGICAL SIDE OF MOSQUITO CONTROL.<sup>1</sup>

By R. HAMLYN HARRIS, D.Sc.,  
Entomologist to the Health Department of the  
Greater Brisbane City Council.

THOUGH rapid strides have been made in our knowledge of various insect borne diseases since Ross first found mosquitoes guilty of carrying malaria, it is undoubtedly true that we have not gained a proportionate amount of knowledge of the actual factors involved in mosquito distribution in our State during the last twenty-five years. Such knowledge is not only desirable but essential, if a thorough mastery of the subject is to enable us to control mosquitoes along biological lines. Some types of mosquitoes show definite associations with one another and the association of the malaria-carrying mosquito (*Anopheles annulipes*) with *Culex fatigans* is quite a common occurrence, but its association with *Culex annulirostris* more frequently still in the Greater Brisbane area goes to show that *Culex annulirostris* breeds only with annulipes when pollution is of the slightest.

<sup>1</sup> Read at a meeting of the Queensland Branch of the British Medical Association on November 5, 1926.

Factors such as these, worked out along scientific lines, should be of the greatest possible utility. We have known for a very long time that certain types of mosquitoes definitely prefer one kind of water to another, but just why this is so has to a very large extent in the past been purely a matter of conjecture.

We may naturally suppose that *Aedes vittiger*, in choosing the particular type of water that it does, does so for a very definite reason. Just what that reason is we do not know, but it is our business to try to find out and it is only within the last year or so that the physical factors in mosquito ecology have been taken seriously. There are many factors which are doubtless involved. There is the chemical composition of the water itself; there is the question of the effect of direct sunlight and its action upon shaded waters; there is the question of odour and what is of the greatest possible importance, the presence or absence of various food organisms. Modern research seems to tend towards the belief that it is not so much the alteration of hydrogen ion concentration in waters, nor that in rising to high values the pH acts directly on the larvæ, but that the growth of the various food organisms is thereby inhibited and larvæ die in consequence of starvation. Hence, knowledge regarding the feeding habits of Queensland mosquito larvæ is required, in order that we may discover in what way mosquitoes can be controlled by starvation.

Then again there is the question of the presence of various aquatic plants in waters, either preferred by mosquitoes for oviposition or waters that are definitely avoided for some cause or other. Caballero in his Spanish experiments with *Chara foetida* used the yellow fever mosquito and obtained no positive results, as was only to be expected from the type of mosquito chosen. Both Buxton and Swellengrebel definitely state that *Chara foetida* is ineffective against top-feeding larvæ and it is therefore doubly strange that this should be so, because it seems to destroy so entirely the theory of the toxic effects of the plant, when it is realized that the anophelines are much more lowly organized than other culicines and therefore more readily killed. How intensely important such considerations may become may be emphasized by one or two instances, say perhaps that of *Culex biteniorhynchus* which occurs in Queensland, feeding upon spirogyra. This mosquito is definitely provided with hooks and shows the absence of plumosity of the antennal tufts which in itself is most significant. This mosquito, feeding as it does below the surface of the water and obtaining its oxygen from the same plant, has no necessity of rising to the surface and the methods of effective control for such a species can be carried out only along biological lines. There are many other such instances which are not only interesting in themselves, but give us knowledge to guide us in the future. *Aedes argenteus* has a curious habit of selecting unusual localities for the deposition of eggs, when its ordinary breeding places are no longer available. This peculiarity led Dr. Buxton to investigate the question of definite

lures for this mosquito and the discovery that a hay infusion proved to be highly attractive suggested to him the idea of bringing about race suicide in this particular type of mosquito. The lure can be rendered poisonous by copper sulphate or arsenious oxide, though at the same time it does not lose any of its attractability, so that the larvæ die the moment they hatch. In view of the fact that the use of crude oils can be only of a temporary nature and that oils are to say the least of it expensive and unsatisfactory, we who are immediately engaged in mosquito control, are forced to look forward to the time when we shall be able to control mosquitoes more efficiently along such biological lines as this paper indicates.

#### FACTORS INFLUENCING THE EXTRACTION OF TEETH.<sup>1</sup>

By LEONARD TROTT, D.D.S. (Pennsylvania),  
Adelaide.

UNDER the title of "Factors Influencing the Extraction of Teeth," such an enormous field for discussion is opened, that I do not propose to cope with the whole question, but merely to mention certain phases and aspects, each of them separate in themselves, but each of them having their concern for dentist and medical practitioner alike.

I am of the opinion that these meetings, inaugurated last year, are really the outcome of the feeling that there is not sufficient cooperation between the medical practitioner and the dentist, each possibly holding different views with regard to the teeth and each advising the patient differently. We do not come here with the intention of expounding to you our dental problems; we are alike students of the healing art. Our difficulties in diagnosis have come to such a pass, that we must depend on information which you can give to help us in arriving at our conclusions and we expect you to consider our opinions of the dental aspect of the case in hand.

I have purposely chosen for this evening branches of our work in which there is much need for cooperation.

The first question is that of undeveloped jaws resulting in overcrowded, irregular teeth or even unerupted or impacted teeth. Great is the temptation in many of these cases to use the forceps, but a satisfactory result by extraction is seldom obtained and then it is only the reward of much foresight and a careful consideration of the factors influencing the eruption of teeth.

Take the case of a child of about ten years of age whose temporary teeth have been extracted. The resistance in front of the first permanent molar which erupts at about six years of age, has been removed and this tooth will certainly have moved forward. When the time arrives for the eruption of the bicuspid teeth, there is no room and either they

<sup>1</sup> Read at a combined meeting of the South Australian Branch of the British Medical Association and the Dental Society of South Australia on November 25, 1926.



will both be impacted within the jaw or else one of them, probably the second, will erupt lingually.

This forward movement of the first permanent molar is one of the big reasons why the temporary teeth should be attended to from an early age and is also one of the reasons why, when a child of five or six has badly decayed temporary teeth, it is the custom of some practitioners to allow these to remain as a resisting force in front of the first permanent molar, provided always that they are satisfied that no general disorder is attributable to them.

Then there is the effect on the development of the jaws of adenoids with the consequent mouth-breathing. We first get a distal interlocking of the lower molars. The condition is recognizable very early in the child's life and the only logical plan of treatment is first to remove the cause by a proper treatment of the nose, and then to establish the normal position of the teeth.

I wish to lay stress on the fact that the removal of the cause of the deformity does not put the condition right. All the forces of the mouth are wrongly directed and development must be continuously retrogressive, as long as these conditions are permitted to exist (Angle). The cooperation that I suggest is that the dentist who should detect the mouth-breathing early, should advise on examination of the nose and that the medical man not only puts the nose right, but sees that the teeth are regulated before the case gets hopelessly out of hand.

The second question to which I shall refer is the methods of elimination of a focus of infection. If we are satisfied that there is an infective condition at the apex of a tooth, how shall we deal with it?

First, by the removal of the gangrenous pulp and the flooding of the root with a solution which will exert a continuous germicidal action for some hours (such, for instance, as a solution of "Dichloramine-T" in "Chlorcosane") we are in many cases able to clear up the condition and render it no longer a focus for the absorption of toxins. If we are able to get a regeneration of the tissues at the apex, surely it can be claimed that this focus has been eliminated without extraction.

Secondly we may resect the gum tissue over the root in question and open a window in the external plate of the alveolus. We are then able to curette away the necrosed bone and remove the apex of the tooth as far as the periodontal membrane has been denuded. This is frequently looked on as the last resort in saving the tooth, after treatment *via* the root-canal has proved unsuccessful and it is remarkable how many successful cases occur even under these unfavourable conditions. If it were considered the routine procedure in the more favourable cases, the percentage would be very high indeed.

I do not know if there is a single instance in surgery in which it is considered unwise to remove necrosed bone and why should it be considered so when the necrosed bone is at the apex of a tooth? We will get a regeneration of bone in the cavity and a

most satisfactory result. Of course, either of these conditions is liable to subsequent reinfection, but that is apart from the point at issue and would have to be dealt with on its merits.

Thirdly we may extract the tooth and thus a focus may be eliminated. There is one pitfall for the unwary and that is the case of a root with a large, clear area surrounding it, the walls of which are sharply defined. If we are able to diagnose it as a cyst, the lining of the walls must be removed.

I have in mind a case, reported in a dental journal in which an edentulous patient was suspected of having some focus of infection and after a fruitless search elsewhere the jaws were examined by X rays and a cyst was found lying deep in the mandible. It evidently originated at a root-apex. As there were no teeth present, it was thought to be impossible to find the focus of infection in the mouth.

It is not always sufficient to remove the tooth. I suggest that we all consider the possibility and the advisability of eliminating an infective condition without extraction and if extraction proves to be necessary, be sure that the infective process is removed.

The next point is quite a small one, but one which leads to much confusion. How often do we dentists hear: "My doctor does not believe in bridges." If anyone is satisfied that the abutment of a bridge is necessarily a potential source of infection, let him also be satisfied that any pulpless tooth is a potential source of infection. We would rather hear: "My doctor does not believe in dead teeth." Providing that the pulp is removed, it matters not whether the tooth is made the abutment of a bridge, is crowned or is filled; the seat of the infection would be at the apex. Of course there are those cases of very badly fitting crowns, evidently put on in a great hurry. Even the makers of them would admit that they are unclean. In deciding whether the making of a crown is a procedure to be advocated, do not compare such poor workmanship with a properly constructed, well-fitting crown. I wish to present evidence to support the claim that by careful treatment the pulp of a tooth may be removed and the root filled and the tooth remain a healthy, functioning factor in the mouth. And furthermore, providing that the root is satisfactorily treated, there is no reason why a well-fitting and properly constructed bridge should not be inserted.

Lastly, a few words about the control of post-operative hæmorrhage.

Unless there are quite a number of teeth to be removed, the fact that the patient reports the history of excessive bleeding from the site of a former extraction, does not usually deter the dentist from operating. He is quite satisfied that he will be able to stop the hæmorrhage. Experience has convinced me that firm packing of the socket is the best means of control we can use. To moisten the gauze with "Hemoplastin" is an excellent procedure but to pack with hydrogen peroxide or adrenalin should be very strongly discouraged. I have seen very bad sloughing following the use of these drugs.

Much difference of opinion exists as to the dentist's obligation to the patient on whom he has



operated. No one enjoys plugging a bleeding socket in the early hours of the morning. The patient's medical adviser frequently lives near by or in the same suburb, but the dentist draws his patients from many suburbs and he cannot be expected to attend at the patient's home in a distant suburb. Furthermore, these patients are not heard of by the dentist until the bleeding has continued for a considerable time, and I contend that, when bleeding has been going on for a long time, the one who is better able to judge of the patient's general condition, is the one more fitted to be called in. If the patient were really exhausted, the dentist himself would be wise to call in the medical man.

I know that strong opinions are held on both sides on this matter, but I think that many calls would be avoided if attention were paid to these two suggestions: Firstly, that extractions be done early in the day so that subsequent hæmorrhage can be reported before the end of the day; secondly, that all patients who have had extractions, be given explicit instructions as to what to do in case of excessive bleeding.

#### DENTAL EXTRACTION IN ITS RELATION TO SURGERY.<sup>1</sup>

By LEONARD C. E. LINDON, M.B., B.S. (Adel.),  
F.R.C.S. (Eng.),

Honorary Assistant Surgeon, The Adelaide Hospital,  
Adelaide.

THE purpose of this paper is to open a discussion on the cooperation of dentist and surgeon and especially on the part played by dental extraction in the treatment of various conditions met with in general surgery. While it is obviously out of place to enumerate all the conditions in which extraction of teeth is indicated, yet I propose to mention a few of them and then to put forward certain questions which will, I hope, be answered by some of the members of the dental profession here this evening. I take it that the aim of these joint meetings is to discuss methods of diagnosis and treatment which can be undertaken by the two professions, working in cooperation. Therefore it must be understood that the following remarks are an expression of opinion, given in the hope that they will be criticized. Extraction of teeth as a part of treatment will be considered firstly in local disease and secondly in general conditions.

In all operations upon the lips and tongue it is of the utmost importance that the mouth should be as free from sepsis as possible. The treatment of simple dental or traumatic ulcers by the removal of the decayed and ragged teeth causing them is obvious; but it is sometimes difficult to persuade the victim of a cancer of the tongue that he must be prepared to have his teeth overhauled thoroughly before the condition of the tongue can be dealt with,

even though time be lost. And yet the treatment of the tongue either by operation or diathermy in the presence of decayed teeth or purulent gums is courting disaster. Not only does it increase the liability to septic pneumonia, the greatest danger of the operation, but also does it frequently lead to much sloughing of the mouth and to infection of the wound in the neck, if the glands have been removed at the same operation. And there is no doubt that the cases of tongue cancer which give the greatest hope, are those which occur in edentulous patients. Other things being equal, the spread to glands and cervical tissues seems to occur earlier and to be more widespread in a patient whose gums and teeth are grossly infected. Carcinoma of the tongue occurs so frequently in association with oral sepsis that we must regard the latter as having a big influence in the causation of cancer. Occasions wherein treatment may be directed towards the prevention of cancer are unfortunately few; but this is certainly one of them and it is impossible to emphasize too greatly the need for professional propaganda on the subject of removing sources of irritation of tongue.

As to whether carious teeth give rise to a septic condition of the tonsils from the swallowing of bacteria is a matter for discussion, but an essential preliminary to operations on the nose and throat should be the removal of carious teeth and the cleansing of the mouth. The occurrence of meningitis and pneumonia is a possibility, though fortunately a rare one.

Dental extraction may be necessary in the treatment of certain diseases of the eye, notably in diseases of the iris, ciliary body and chorioid. Radiography will occasionally reveal the existence of an apical abscess and the removal of the affected tooth results in improvement in the ophthalmic disease.

In the worst forms of trigeminal neuralgia one is unable to find any exciting cause in the distribution of the fifth nerve; and in these cases the only treatment of lasting benefit is the removal of part of the Gasserian ganglion or the division of its sensory root. Here tooth extraction is needless and wasteful. But in the less severe forms a focus of irritation is to be found in the teeth and these cases occur particularly in people under the age of thirty-five. These reflex neuralgias may often resemble the true *tic douloureux*, especially in the sudden onset of most intense pain over the distribution of the second or third divisions of the fifth nerve and they have the same prostrating effect on the patient. Unerupted third molars and root abscesses are the most frequent causes and their removal relieves what must be an unbearable condition.

The subject of orthodonture will be dealt with fully by other speakers, but I wish to refer briefly to fractures of the jaws and to plastic surgery of the jaws. The chief object in the treatment of a fractured jaw is to avoid malocclusion; as a rule fractured jaws unite without much trouble. Since the advent of motor vehicles this fracture has become very common and is often multiple and accompanied by very severe injury to the soft parts. In

<sup>1</sup>Read at a combined meeting of the South Australian Branch of the British Medical Association and the Dental Society of South Australia on November 25, 1926.

spite of that it is astonishing to see how little the inevitable infection hinders bony union and the bones often unite well, even if nothing be done to them. But in most of the multiple fractures there results a degree of malocclusion sufficient to be a serious handicap to the patient, unless steps are taken to avoid it. The single fracture in the region of the mental foramen or canine socket usually results in good occlusion. But in these severe motor injuries the cooperation of the dental surgeon with the surgeon is very necessary. Teeth dislodged beyond hope should be removed, also teeth whose sockets are opened up by the fracture (Colyer) and teeth displaced should be straightened up as soon after the accident as possible. But isolated pieces of bone should not be removed, while they retain any connexion with the jaw, as they have a great tendency to union and will help to retain the normal shape of the jaw, a point so essential to the making of a denture later on. The treatment of traumatic malocclusion will be dealt with by others.

The preceding remarks do not give scope for controversy, at least I hope they do not. The following are some points that I should like to hear discussed, particularly by the members of the dental profession. They are chiefly concerned with the after effects of extraction of teeth. A great deal has been written recently in the English journals about the neglect of teeth in England which existed up to the last few years. And certainly as far as the patients attending some of the London hospitals were concerned, one was struck by the prevalence of decayed and uncared for teeth in young adults, while on returning to Australia one was given the idea that the teeth had been cared for almost too vigorously. I think that it is very noticeable how many people of the age of twenty to thirty possess two full sets of artificial teeth, at any rate among the people who compose the majority of our patients. I do not wish to infer that they were victims of unwise extraction, but rather to raise the question of the possible ill-effects of complete extraction. The following is a type of patient by whom, I expect, we have all been afflicted; a young adult, well-nourished, and not looking very ill, who complains that his food gives him neither benefit nor enjoyment, that he suffers from queer, nervy feelings within and palpitations and loss of energy and sometimes symptoms resembling those of gastric ulcer and so on. On examination, the most noticeable points are a dry, white-furred tongue, a dry, frothy mucous membrane of the mouth, a heavy or even offensive breath and in nearly all of them two full plates of artificial teeth. The question to be answered is: What is the effect of total extraction of teeth upon salivary and gastric secretions? It certainly seems to vary with age; the majority of elderly people with artificial teeth have an improved digestion, whereas children and young adults seem to suffer by the loss of all their teeth. Is it the correct explanation to say that by the time a man passes the half-way mark, his salivary and gastric secretions are so thoroughly established that the loss of teeth does not inhibit them and that the presence of natural teeth in the young adult still

influences his salivary secretion, as it did when he was an infant? Normal saliva is one of the stimulants of a normal gastric secretion and if total extraction in the young adult leads to the secretion of an abnormal saliva, then it is easy to understand the consequent dyspepsia. And if that is the case, then total extraction in young people should be regarded as the very last line of treatment and we should redouble our efforts to persuade the public to seek advice while conservative dentistry is still possible.

Again, what is the opinion of the dental profession with regard to the extraction of most or all of a child's milk teeth? It would appear to be wrong on the grounds, firstly, that the normal development of the jaw depends on the presence and growth of the milk teeth and secondly that salivation is influenced by the presence of milk teeth. But it is frequently advised and practised and it would be of value to know whether it is worse to retain a number of badly decayed teeth, than to risk the effects of the absence of the first teeth. As far as I have seen, milk teeth usually decay above the gums. Are the teeth of the second dentition likely to be affected, if decayed milk teeth are retained?

The last combined meeting considered the question of focal infection due to dental sepsis and I think I am right in saying that Dr. Ray was unable to find in the current literature sufficient evidence to prove the relation between root infection and certain systemic diseases under discussion at that meeting. There is considerably more evidence to suggest the relationship between oral sepsis and diseases of the stomach, duodenum and gall bladder. The theory that oral sepsis is one of the biggest factors in the causation of gastric and duodenal ulcer is an old one and part of the routine treatment of these conditions is attention to the teeth and gums. Oral sepsis probably is a factor in maintaining the disordered secretion associated with ulcers, but I think there is as yet no convincing proof that it gives rise to the original ulcer. If such were the case, then gastric and duodenal ulcers should be more common than they are. But once an ulcer has developed, dentistry and dieting are as important as surgery in the treatment of the ulcer and the prevention of recurrence. But we have not enough evidence to say that regular attention to the state of the teeth and gums will prevent the formation of ulcers. Nevertheless, all patients suffering from dyspepsia should have their teeth and gums thoroughly overhauled as part of their treatment and in the dyspepsias not associated with ulcer the result of dental treatment seems to justify the assumption that oral sepsis is their chief cause.

I hope I have not given the impression of being hostile to the practice of dental extraction. Far from it. Its value has been proved so often in the treatment of surgical conditions; but at the same time we should try to find out all the possible after-effects of extraction *en masse* before we recommend it and above all we should try to place our patients in the hands of members of the dental profession before they reach the condition when extraction becomes the only remedy.

FACTORS INFLUENCING EXTRACTION OF TEETH.<sup>1</sup>

By A. P. R. MOORE, B.D.S.,  
Adelaide.

THE aspects I have chosen for my contribution to this evening's subject are those which have a diagnostic rather than a surgical or anatomical significance.

Every indication points to the advisability of retaining the natural organs of the body for as long as possible providing that such retention does not prejudice in any way the health of our patients.

There exists a great variation in the potentiality of dental infections for causing systemic disturbances and as Sir Kenneth Goadby says that in the majority of cases it is very difficult to establish definitely any direct causal relationship between these conditions and their ultimate effects. However, in view of the fact that dental infection can and sometimes does give rise to general bodily disorders, every case must be regarded as potentially serious.

In spite of the fact that a septic focus can be found in 80% of the mouths of patients casually examined, it has been observed that only about 10% of this number suffer any grave systemic involvement therefrom. To determine in which cases dental infection is impairing health is an important problem and imposes considerable responsibility upon the dentist as a diagnostician; for his decision may vitally affect the future welfare of a patient.

Dentistry is no longer a "desultory trade," in spite of the fact that some of our dentists acquired most of their knowledge in a blacksmith's forge. We must forget this, just as we forget that a few years ago medical men, instead of putting up a brass plate in front of their consulting rooms, erected a barber's pole. Most will probably agree that dentistry now merits recognition as a branch of medicine and surgery.

When called upon to make suggestions concerning a suspected tooth our first consideration is to ascertain whether it is infected, for it is only on account of the possible harbouring of pathogenic organisms that such a tooth may be a menace to the body in general.

As far as the mouth is concerned the term infection must always be regarded in a relative sense. During life microorganisms are never absent from the oral cavity and their presence does not necessarily imply the existence of a pathological condition.

Concerning teeth, no matter how minute the cavity, every carious tooth is an infected tooth and even in such cases it has been scientifically proved that the organisms may pass through sound tooth structure and infect the vital pulp.

Providing that the vitality of the tooth pulp is maintained, the effects of such infection may be successfully dealt with and the tooth rendered safe.

But should the pulp of a carious tooth become gangrenous, the permanent preservation and sterilization of such is a well nigh impossible task owing to the fact that conditions exist which are most favourable for bacterial growth. The organisms have abundant pabulum and protection, as the defensive mechanisms of the body are not able to enter a pulpless root canal and combat them; nor can the focus be eliminated save by surgical interference.

If I were a microorganism there is no home I would rather have than a pulpless tooth and it seems to me that some mouths must appear like a "thousand homes scheme" to the invading organisms.

A dead or pulpless tooth is in effect a special type of sequestrum, although the periodontal membrane may still be vital and prevent its exfoliation. Would any medical practitioner readily sanction the retention elsewhere in the body of an infected sequestrum?

From this infected dental sequestrum organisms and their toxins may pass into the body; but is such an occurrence in any way harmful to the body? The source of infection is the mouth and organisms therefrom must quite frequently gain access to the body by other channels. Can we regard their effects as any more dangerous when they gain access by way of a root canal?

Although such dental infection is not a specific one, the predominating organisms belong to the strepto-pneumococcal group and are particularly susceptible to mutation. This property of mutation is dependent upon variations in culture medium as oxygen tension, tonicity of fluids *et cetera* which are not the same at the apex of a tooth as within the mouth.

It has been suggested that these changes in cultural characteristics are accompanied by changes in pathogenicity and the development in some cases of a specific affinity for certain tissues, although this has yet to be decisively verified. However, the possibility in these cases of an enhanced pathogenicity certainly exists.

I have attempted so far to show that every carious tooth is infected, but that such may be satisfactorily overcome, providing the tooth is vital. Once the pulp of a tooth is destroyed, however, the possibility of such tooth ever being sterilized or of remaining sterile is very remote, because of the anatomical disposition of organic matter throughout the minute tubular tooth structure and other factors propitious for bacterial growth, together with the concomitant acquirement, possibly of an increased virulence towards the host. In the writer's opinion every dead tooth is an infected tooth!

The next question is to determine the significance of this infection. No one would advocate the extraction of a vital tooth which was only very slightly decayed; yet such a tooth is just as certainly infected as is any dead tooth, although we know that conditions obtain which render an infected dead tooth a more serious predisposing disease factor. At this stage it is well to remember that pathogenic

<sup>1</sup>Read at a combined meeting of the South Australian Branch of the British Medical Association and the Dental Society of South Australia on November 25, 1926.



organisms may exist in the body without giving rise to disease, owing to the existence within the body of protective faculties as in the case of an acquired immunity or in other ways.

What we have to determine is, when is a patient safe from the effects of his or her dental infection?

It is the writer's conviction that the condition of the patient rather than of the teeth should ultimately determine whether these organs are removed or retained.

In trying to ascertain the powers of resistance possessed by various patients we have a valuable index in the type of reaction exhibited by the body at the site of bacterial invasion. In some cases the resistance of the body appears to be so feeble that bacteria and their toxins pass directly into the general circulation without giving rise to any defensive reaction whatsoever.

In others the body constructs a special barrier around the apex of the infected tooth, preventing the entrance of organisms therefrom. This barrier tissue has frequently been regarded as a pathological neoplasm, termed a granuloma; but it is really a highly vascularized defensive membrane. A patient who develops such a tissue at the apex of an infected tooth is in less danger of systemic infection than the patient who fails to construct such a protective local quarantine station. Those who thrive in spite of dental infection, are those who exhibit these protective granulomatous like tissues surrounding the apices of their infected teeth.

The significance of this local reaction has frequently been misinterpreted. When a highly vascularized defensive tissue is formed at the apex of an infected tooth, considerable rarefaction of alveolar bone occurs to accommodate it and accordingly a radiograph of the tooth would display an area of increased radiopacity. Many teeth have been condemned merely on this account.

Yet such radiographs, providing the periodontal membrane is intact, indicate conditions most favourable for successful conservative treatment.

In the opposite case, when the patient's defensive powers have not been capable of forming this local protective barrier, the bone about the tooth apex would show very little evidence of rarefaction and the tooth might be regarded as normal; whereas it would really be a graver menace to the patient than in the former case, where radiographic changes were most evident.

Broderick, of England, says that the very presence of a chronic systemic lesion of focal origin lies in the lack of defensive power on the part of the body rather than in the bacteriology of the condition.

Although a dangerous infected tooth is seldom radiographically normal, care must be taken lest the important science of radiographic interpretation be based upon the absurd hypothesis that trans-radiant areas are necessarily infected areas and that radiographically normal areas are therefore non-infected areas.

If a patient were suspected of harbouring some septic focus, the writer would not regard a tooth giving evidence of infection on radiographic

examination with as much suspicion as he would an infected tooth which appeared normal when examined by X rays.

With reference to the status of root canal fillings and radiographic evidence, prominent authorities state that no filling ever so perfectly fills a canal as to shut out bacteria completely or permanently.

In diagnosis the important thing is to ascertain whether the entrance to the canal is sealed; I feel that a leaky filling is a far graver danger than a canal which is only partially filled.

A radiograph can show whether a root filling extends to the apex of the tooth, but it cannot reveal the more important point, namely, whether the filling completely occludes the lumen of the canal and if it does not, organisms have access to the general circulation by way sometimes of an apparently well filled root canal.

It has never been proved that root canals need be completely filled in order that teeth may be safe.

Another misconception relative to the rôle of infected teeth concerns the presence or absence of pus and of pain.

A profuse flow of pus in connexion with one dental infection does not necessarily imply the presence of a more dangerous infection than is found in the absence of pus.

The former reaction is characteristic of a patient with a high ionic calcium content in the blood, while in the other type of case patients are not able to maintain a high ionic blood calcium content and under such circumstances there is rarely any pus or other manifestation of local defensive reaction, although susceptibility to rheumatic group lesions is relatively high.

A disturbance of the normal acid-alkali balance which constitutes according to Weston Price an important hormone of the body, may occur as a result of the depression of ionic blood calcium as seen in the latter type of infection.

When a local defensive tissue has been formed and is perfectly protecting the body, the infected tooth is much less likely to be free from pain than in the opposite case, where no local resistance to bacterial invasion has occurred.

Summarizing we may say that a condition of safety or danger relative to the retention of infected teeth is dependent most upon the defensive powers of the patient and that the tissue reactions at the site of bacterial invasion, if correctly interpreted, afford us the most reliable criterion for determining the efficiency of these forces.

Many laboratory tests have been suggested to detect causal relationship between infected teeth and systemic diseases.

Organisms harboured in dental foci are frequently found to produce substances which have a very pronounced effect upon animals which are the subject of experiment and some claim that the development in animals of lesions similar to those from which a patient is suffering establishes a definite proof of relationship between the dental



infection and the systemic lesion. The results appear attractive; but very few bacteriologists accept or have been able to preserve this pathogenic specificity in organisms taken from focal infections.

Further, the pathogenicity of organisms towards laboratory animals is no criterion of their pathogenicity towards man. A few minims of normal saliva injected into the abdominal cavity of a guinea pig will cause its death. In practice I have seen some mouths the saliva from which would probably badly upset even an elephant, yet the possessors thereof appeared well and happy.

The isolation from the urine or fæces of streptococcal organisms having cultural characteristics similar to those present in a dental focus would strongly suggest that the dental focus was ætiologically related to any existing systemic lesion, but lack of evidence in this respect would not rule out the possibility of the dental nidus being a disease exciting factor.

Agglutination and complement fixation tests have not proved successful. The strepto-pneumococcal organisms and products do not give a reaction with patients' serum sufficiently definite to be of any use from a diagnostic point of view.

Sensitization tests, somewhat akin to the tuberculin test, have been suggested; but up to the present have not been of any practical value.

Blood counts do not directly affect diagnosis of dental infections, although influencing treatment undertaken, as dental infections not uncommonly are accompanied by a secondary anæmia. A factor never to be overlooked, is the extent of destruction in tissues that should support the teeth. If this tissue destruction has progressed beyond a certain stage, it is rarely advisable to attempt to retain the teeth, even though they be perfectly sound.

In taking into consideration the possible effects of dental infection, the possibility of an abnormally lowered resistance must not be ignored. Infected teeth are a graver menace to people who are ill than to normal persons and such circumstances might warrant the removal of any suspected teeth. In many of these cases removal of septic teeth is followed by improvement in general health. This does not necessarily mean that the teeth have been the cause of the illness; the improvement is often merely due to a lessening of the patient's load of infection, which I consider would always be a desirable feature in the treatment of certain diseases.

But before all teeth are sacrificed, every other possible focus must be investigated. Many patients on account of the inability to chew their food and the drastic change of diet suffer considerable inconvenience following the removal of all teeth. With all due respect I do not feel that any medical man or dentist is justified in condemning a mouth full of teeth when his diagnosis of conditions is based upon nothing but "snapshot" clinical observations of the case. Further evidence is necessary.

A rational determination of affairs should include history of the disease and the patient's family history.

If there is a family or individual history of susceptibility to those degenerative diseases usually associated with chronic streptococcal infection, then, in my opinion all dead teeth should be removed.

#### Conclusion.

In reviewing this paper it seems that there is nothing very definite and much to cause worry. However, David Harum says that "A reasonable amount o' fleas is good fer a dog—keeps him from broodin' over bein' a dog." And perhaps these numerous problems keep our minds from wandering into less serviceable channels.

To attempt to outline any definite method of diagnosis in a paper of this nature would be ridiculous; each case must be decided upon its individual merits and although I have not introduced any extensive scientific support for some of my contentions, I felt in a combined meeting of this nature that most good would result from a brief outline of the trend of dental thought pertaining to some of these matters, rather than from a highly technical discussion upon fundamental details.

#### SOME BAD RESULTS OF GYNÆCOLOGICAL OPERATIONS.<sup>1</sup>

By R. I. FURBER, D.S.O., M.B., Ch.M. (Sydney),  
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In trying to cover a wide field I have only time to mention the more striking of the ill-results of the more commonly performed operations and the article has developed into a somewhat unscientific, jerky summary of my personal observations. It is not intended as a hypercritical review of the work of others, for it was some of my own failures that first forced me to see that as much or more can be learned from them as from successes.

#### Dilatation of the Os, Curettage of the Uterus and the Passage of a Sound.

Dilatation of the os, curettage of the uterus and passing a uterine sound may be taken together.

Perforation of the body of the uterus is a common incident and warnings against it have been so hackneyed that it hardly needs mention.

I have seen laceration and perforation of the cervix or its results on three occasions. Once for example it occurred during a dilatation of the os and preliminary to the performance of an Alexander operation. The patient was seen some months later suffering from pain and discharge and a mass felt in the left parametrium was found to be gauze packed in through a lateral rent in the cervix. The cause of cervical tears may be due to the extension of a previous obstetric laceration, but may also be due to the injudicious use of branched dilators. I would like to emphasize the word injudicious, as I

<sup>1</sup>Read at a meeting of the Section of Obstetrics and Gynæcology of the New South Wales Branch of the British Medical Association on June 16, 1926.

think expanding dilators are of the greatest value when carefully used and adjuvant to the Hegar types.

Infections of the cervix, body, tubes or parametrium are sequelæ to be feared.

Continuation of the dysmenorrhœa for which dilatation has been performed, is sometimes due to the too rapid performance of the operation leading to insufficient dilatation or to the non-use of a stem pessary.

Continuance of discharge in gonorrhœal endocervicitis after curettage is certain and nothing else could be expected in view of the pathology of the disease. Still this is a procedure not uncommonly performed.

Curetting a fibroid is a matter of considerable danger when the capsule is penetrated and infection introduced; it may render immediate hysterectomy necessary.

The above operations should be undertaken only when there is a clear indication that they are going to be of some therapeutic or diagnostic service and should be carried out with the greatest care and asepsis.

#### Trachelorrhaphy.

Failure after trachelorrhaphy is common enough and may be attributed to insecurely tied sutures or to sutures that are too readily absorbed. I think that one or two sutures of chromicized gut should be used on each side in the Schroder or in the Emmett operation.

Secondary hæmorrhage is by no means a rarity and has the same cause as failure. It usually occurs on the eighth to the tenth day and when the necessity for plugging or resuture to control the bleeding arises, is a devastating accident to other plastic operations that may have been done.

Cervical stricture may be due to inaccurate coaptation or to too deep a wedge of tissue having been removed. I have seen two patients with cervical stricture suffering from almost complete cryptomenorrhœa. In one of them the condition simulated an ectopic pregnancy with amenorrhœa, enlarged uterus, effusion of blood into the pouch of Douglas and pain.

Dystocia is commoner in my experience after these operations than after any other; twice I have had to make radial incisions and once a long labour resulted in extensive laceration before the head could pass the cervix.

I have never seen trouble follow Sturmdorff's operation.

#### Anterior Colporrhaphy.

Failure after colporrhaphy is the only ill-result that I have seen. This is usually due to an insufficient denudation or insufficient mobilization of the bladder. For bad cases such an operation as Blair Bell's with free mobilization of the bladder and the approximation of broad surfaces or Fothergill's operation which carries the dissection right round and includes the cervix, is required. Failure may also follow the omission of a supporting perineorrhaphy or of an anteverting operation when necessary.

#### Posterior Colporrhaphy or Colpo-Perineorrhaphy.

Relapse is common after posterior colporrhaphy or colpo-perineorrhaphy and is due to either insufficient denudation, inefficient suturing of the *levatores ani* or to the non-performance of some necessary adjuvant operation.

Fistula occurs occasionally; as the result possibly of too deeply placed or too tightly tied sutures a hole makes its appearance through the perineum into the vagina. This does not cause much trouble and can easily be made good.

Stricture is a frequent bad result and it is usually seen at the outlet or about 1.8 centimetres (three-quarters of an inch) higher, causing dyspareunia of varying degree. It follows too vigorous a denudation or too tight a lacing together of the levatores.

Perineorrhaphy for complete tears seldom fails when done by those accustomed to plastic surgery. Failure is probably due to the dissection lateral to the anus being insufficient to display the sphincter area and to inadequate coaptation of the *levatores ani* after plastic operation.

Parturition after plastic operation may produce some degree of recurrence and I have until recent years rather dreaded advising plastic operations when pregnancy was possible. Some results that I have seen lately, have largely removed that fear for I have been pleasantly surprised at the small amount of after trouble. In these cases a slow labour is especially indicated.

#### Operations for Vesico-Vaginal Fistula.

Bad results after operations for vesico-vaginal fistulæ are common and extreme. One patient for instance had seventeen operations performed by two men before the condition was finally alleviated by a third. They should be undertaken only by those expert in plastic surgery, since if they are not cured at the first operation, harm is done and subsequent operations become increasingly difficult. The failures result in the main from insufficient mobilization, from excessive tension or from lack of preoperative preparation.

#### Operations for Recto-Vaginal Fistula.

Bad results after operations for recto-vaginal fistulæ are not quite so common as after vesico-vaginal fistulæ, but the same causes operate for their production. Both types of fistula seem to be much less common now than they were even ten years ago, probably directly due to increased interest in obstetrics. Fistulæ that appear immediately after delivery are due to direct trauma and are much more successfully dealt with than those that show up about a week later. These are due to sloughing of areas made gangrenous by pressure, resulting in actual loss of tissue that has to be made good.

#### Anteverting Operations.

There are no means of obtaining statistics in regard to the percentage of bad results following different operations for anteverting the uterus, but much can be learned from observations and from impressions left by them.

*The Alexander-Adams Operation.*

Failure is commoner after the Alexander-Adams than after any other type of operation. It may be due to the use of round ligaments that are not strong enough, or to inefficient demonstration of the ligaments. Most commonly, however, it results from failure to deal with accompanying pathological conditions of the uterine appendages or of the pelvic floor, recognized or unrecognized. The great difficulty of eliminating such conditions with certainty reduces the applicability of the simple Alexander operation almost to a vanishing degree.

Pain is usually attributed to nerve incorporation in a suture, but I think that undue tension is a far more important factor. No tissue in the body will stand up against the pull sometimes imposed on the unfortunate round ligaments without resenting it vigorously. Hernia is not a rarity and is due to the peritoneum not being stripped off the round ligament and to the formation of a peritoneal pouch.

*The Gilliam Operation and its Modifications.*

Failure after Gilliam's operation is a relative rarity probably because the strength of the ligaments can be properly appraised and the accompanying abnormal conditions recognized and corrected. Pain is, however, very common at the site of suture of the ligaments and is due in the main, as in the Alexander, to excessive tension. Pain results also, when the ligaments are brought through an aperture in the anterior sheath, the knuckle being nipped and constricted every time there is tension on the flat muscles.

I have never seen internal hernia as a sequel, but the original Gilliam operation was rapidly abandoned on account of that risk and that operation is now rarely performed.

Angulation of the tubes is a risk common to all internal shortening operations and this possibility should always be considered. It may be attributed to the tube being in exceptionally close relation to the round ligament and so when the latter is picked up by the suture, angulation occurs. I have seen an ectopic gestation that I thought was probably due to this happening and in another case a knuckle of tube was found incorporated on each side in the suture holding the round ligaments. I have been credibly informed of a case in which the tubes were used instead of the ligaments.

*The Baldy Webster Operation.*

I have seen only two bad results from the Baldy Webster operation, but it is not very commonly performed. Failure in one case prettily demonstrated the ligaments sewn at about the level of the internal os pulling the cervix forward and upward to give the most complete retroflexion it has been my lot to see. Internal hernia with strangulation through the aperture in the broad ligament occurring in the other case, should make one careful to see that these apertures are securely closed.

*Internal Shortening.*

Internal shortening of the round ligaments and plication of the broad ligament give fair results, but

precautions should always be taken against angulation and kinking of the tubes.

*The Kelly Operation.*

The Kelly operation of sewing the round ligaments over the tubes to the back of the uterus, gave the worst results I have ever seen, constricting the tubes and causing an ectopic gestation on one side and a hæmatosalpinx on the other, both tubes being twisted like a ram's horn. That a tunnel should be formed and maintain its patency, as the originator states should happen, comes into the sublime hope category.

Shortening of the utero-sacral ligaments is not commonly performed and I have seen only one bad result in which the ligaments by design or accident were attached half-way up the posterior surface of the uterus, pulling the body back and so exaggerating the condition.

*Ventrofixation.*

Ventrofixation in the non-child bearing period I have never seen fail, nor have I seen any ill-results come therefrom. In such cases it is clearly in my opinion the most suitable operation.

*Ventrosuspension.*

Failure after ventrosuspension is rare when no pregnancy supervenes, but I have seen many patients operated on subsequent to pregnancy and invariably a cord has been formed of varying length and strength allowing every degree of relapse. I have never seen dystocia after ventrosuspension, but many cases have been reported. Protagonists of ventrosuspension attribute it to the sutures being placed too high in the uterus or even to the dorsum as in the original Kelly operation and maintain that no dystocia can follow a properly performed operation. Be that as it may, relapse is so common after pregnancy that one of the other types of operation must be preferred. Still various factors such as tenuous ligaments or difficulty in using them without causing angulation of the tubes may make ventrosuspension the only possible choice. The pinnacle of bad gynæcology is reached when patients with a damaged pelvic floor are treated by a round ligament anteverting operation. These unfortunates wear the drawn, hunted look of those in never ending pain and it is often extremely difficult to help them. Even when a floor restoring operation is subsequently performed, the pain may have been so continuous and so severe that a condition of hyperæsthesia remains that taxes them to the utmost.

Cases of this nature are not rare and in the present state of our knowledge the operator should be considered guilty of malpractice, either from lack of knowledge or from lack of conscience.

*Salpingectomy for Inflammatory Conditions.*

Pain very commonly follows salpingectomy for inflammatory conditions, but it is hardly fair to blame the operation but rather the condition that called for it. The prayerful expectant treatment adopted by patients or practitioner only too commonly results in the formation of pus collections



in the pelvis, tubes or ovaries, adhesions, destruction of ovaries and so on. This results in an operation of magnitude with the tissues left behind damaged both by the operation and by the inflammation. The patient is left with a life sentence of chronic pain and valetudinarianism.

The condition of many of these patients is forcing me to think that the pendulum of delay has swung too far and that deductions have been drawn from statistics from the point of view of mortality without sufficient consideration being made of resultant morbidity. The time has arrived when we should readjust our ideas with regard to early interference, at least in cases of gonococcal origin. To this class only the following remarks apply.

Continuation of discharge and development of tumours innocent or malignant may be considered together.

When I think it may be necessary to remove the tubes, the patient is usually given the pros and cons of the desirability of hysterectomy, if it should be found that this can be done without jeopardy. The advantages are that with a coning out hysterectomy, the nidus of the gonococcus is removed and also the possibility of the development of tumours is avoided. That there may be some theoretical possibility of it upsetting the metabolism, particularly the calcium metabolism, I admit, but I have never seen any clinical suggestion of this. Some women jump at the suggestion, advancing a reason of their own that they would be relieved of the nuisance of menstruation, some, however, do object, mainly from sentimental reasons as far as one can gather. In these a Sturmdorff or some other suitable trachelorrhaphy should be done to remove the focus, clear up the discharge and reduce the risk of carcinoma of the cervix.

#### Section of Ovaries.

Operations for dysmenorrhœa of ovarian origin are usually very disappointing in their results. The sclerocystic type with thickened *tunica albuginea*, causing mainly premenstrual pain and usually accompanied by sterility, can be attacked with a fair amount of success. For some years I have cut such ovaries from pole to pole, two-thirds of the way towards the hilum and sewn the cut surfaces away from each other with universal satisfaction to the patients. Although one may hesitate to advise this in young women, I am quite satisfied that in the apparently sterile there is no objection to it. Adhesions do not seem to develop at all and even if they did, the relief obtained is worth it. The procedure obtains its effect by relieving tension in allowing the escape of the ovum, thereby possibly actually favouring fertility than hindering it.<sup>1</sup>

When varicocele of the pampiniform plexus is present and it is very common, anteverting a retroposed uterus, suspension of prolapsed ovaries and excision or ligation of the veins should be done, but the results on the whole are poor.

<sup>1</sup> Since this paper was read a patient, aged thirty-eight years, with one child of seventeen years old, has reported to Dr. W. Evans. She is six months pregnant. I performed section of her ovaries on June 12, 1925.

#### Supravaginal Hysterectomy.

Bad results attributable to supravaginal hysterectomy itself are pain and the persistence of discharge from or the development of malignant tumours in the stump.

Pain is sometimes to be attributed to the manner in which the round ligaments are sutured to the cervix, regardless of any consideration of the degree of tension that is imposed on them. In suturing the strain placed on the round ligaments and also on the infundibulo-pelvic folds should always be moderate.

I have had experience of two cases in the last year in which carcinoma appeared in the stump of the cervix left after a supravaginal hysterectomy and in each case there did not appear to have been anything to stand in the way of a more extensive operation. It seems to me that a supravaginal hysterectomy is only a half-completed operation and the cervix should be coned out from above in every case in the absence of contraindications. If this cannot be done easily, removal of the cervical canal *per vaginam* should be performed either at the time or later, as considered desirable in each individual case, particularly when the cervix is obviously pathological. Carcinoma in the stump presents great difficulties at operation, the previous operation having upset the tissue planes and the relations of bladder and ureters.

There are not the same objections to a coning out hysterectomy as there are to a panhysterectomy as the danger of injuring the bladder or ureters is eliminated and the fibromuscular shell of the cervix is left with its various supports intact to prevent the development of prolapse.

#### PUERPERAL INFECTION.<sup>1</sup>

By H. A. RIDLER, M.B., Ch.M. (Sydney),  
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Honorary Assistant Surgeon, Royal Hospital  
for Women, Paddington; Honorary  
Assistant Surgeon, The Women's  
Hospital, Crown Street.

My paper contains very little that is not well known to you all. My remarks are chiefly concerned with certain aspects of diagnosis and treatment. When a patient has a rise of temperature during the puerperium the cause of that rise must be found as soon as possible for the wellbeing of that patient. One must not be content with such a diagnosis as pus in the urine, pyelitis, a cold or influenza, till one is certain that the cause is not a puerperal one.

The commonest causes of a rise in temperature during the puerperium are sapræmia and infection of lacerations of the soft parts. Mild cases of sapræmia promptly dealt with as a rule give no trouble, but if neglected pass into the more severe type.

<sup>1</sup> Read at a meeting of the Section of Obstetrics and Gynaecology of the New South Wales Branch of the British Medical Association on June 16, 1926.



With regard to lacerations of the soft parts these should always be looked for after labour and stitched if possible. While speaking of lacerations one must consider another condition of the soft parts caused by undue pressure, resulting in sloughing of the cervix, vaginal wall or perineum.

If from the nature of the labour one suspects that such sloughing is going to take place and it frequently does in cases of dystocia, prolonged labour and missed delivery, the parts should be kept clean from the onset of the puerperium and one should not wait till the temperature rises and the parts have become dirty before starting treatment. By this time the infection may have spread beyond such control as you originally had over it, to start such troubles as septic thrombosis, cellulitis and in the worst cases of neglect septicæmia.

This is the type of case which when neglected develops into septicopyæmia and which can be prevented by the proper treatment at the onset of the puerperium. It is this sort of case that is so frequently overlooked, especially when the man in charge of the case has not conducted the labour.

I now wish to speak of the differential diagnosis of sapræmia, infected lacerations, sloughing of the soft parts and septicæmia. In numbers of cases the cause of the rise of temperature is easily found, but when the cause is uncertain, the patient should be placed on a good bed, couch or operating table with a good light available and be prepared for an anæsthetic if necessary, the generative tract right up to the cervix and fornices should be examined with the eyes as well as the finger. If that yields no information, the finger should feel the inside of the uterus and remove any *débris* if present. A diagnosis of an empty uterus must not be made by curetting and finding nothing. It is on a par with "opening the abdomen and having a look." This line of treatment is distinctly reprehensible.

If fragments are retained, they may be removed with the finger. Failing that, if the operator has had his finger inside, he knows where to find the fragments with his curette and that is the placental site and so it is not often necessary to curette the whole surface of the interior of the uterus. Such a procedure only opens up fresh sinuses and spreads the infection further and causes a greater loss of blood. These patients nearly always lose a lot when the uterus is curetted and they cannot afford to lose any blood to lower their resistance still further.

There are many people who say that the curette and some who say the finger has no place in the treatment of puerperal septicæmia. If one can be certain the interior of the uterus is empty these people are quite correct. Also some say that a little *débris* inside does not matter, that only gross fragments are of importance.

I think most of you will have seen patients who have had a high temperature and this temperature has come down after a light curettage or use of a finger. These patients certainly have not septicæmia at the time of curettage, but is our knowledge of

puerperal septicæmia so perfect that we cannot say that such patients would not have suffered from septicæmia if left alone?

The point about curettage which I consider the most important of all is the point of time at which it is done after the initial rise of temperature. If it is going to be done at all, it must be done within twenty-four to forty-eight hours after the rise. How much longer after this a curettage may be done with safety I do not know. I hold the opinion that if the uterus is curetted after the lapse of a certain period and if that patient is still running a high temperature, the possibility of that patient's recovery is certainly jeopardized. At the same time if there are large lumps of placenta left behind in the uterus, they should be removed at any stage.

With regard to the treatment of puerperal septicæmia, the safest is prophylactic. There is no known cure, we are told of many, but the one which is always necessary is competent nursing. The medical attendant should not leave the details of nursing treatment to the nurse, but should give definite instructions. Some nurses have the idea that when a patient runs a temperature she should be given fluids only as her diet. This is quite wrong in the case of puerperal septicæmia. The patient should be fed with chicken, fish, bread and butter and anything else in reason that she fancies.

With regard to aperients, these should be ordered by the medical attendant, as some nurses are inclined to purge the patient and cause exhaustion by diarrhœa and by the efforts of putting her on and off the bed pan; she should have rest and sleep and a good nurse can do a great deal towards this.

## Reports of Cases.

### PROPTOSIS: SOME INTERESTING CASES.<sup>1</sup>

By H. M. JAY, M.B., B.S. (Adelaide),  
*Honorary Surgeon for Ear and Throat, Adelaide Hospital,*  
*Adelaide.*

THE title of this paper is merely an excuse to bring before you a series of cases which I hope will prove of interest to you. It is not my intention to attempt to discuss fully the subject of proptosis, but rather to deal with it discursively as occasion arises in placing before you each case history.

I need hardly remind you that in any circumstances the occurrence of proptosis is always to be regarded seriously, as in the majority of these cases unpleasant possibilities arise and in those associated with suppuration the danger to life is great.

The prognosis therefore should always be guarded; cavernous sinus thrombosis and meningitis are ever present dangers, whilst hidden malignant disease throws an attendant shadow over the undiagnosed condition.

#### Case 1.

The first patient I can remember seeing with proptosis was a child who was brought into the Adelaide Hospital during the last year of my medical course. It died a few minutes after admission from cavernous sinus thrombosis of otitic origin. For some reason or other this

<sup>1</sup> Read at a meeting of the Eye, Ear, Nose and Throat Section of the South Australian Branch of the British Medical Association in June, 1926.

particular case made a profound impression on me, doubtless because of the absolute hopelessness of attempting any therapeutic measures and the characteristic appearance of the child's blue and bulging lids. I mention it because cavernous sinus thrombosis is uncommon and this was the first of a series of four which have come my way—an unfortunately liberal experience in this disastrous affection.

#### Case II.

In October, 1914, a man, aged sixty-two years, came to me with pronounced proptosis of the right eye associated with a certain amount of downward displacement of the globe. He gave a history of operation thirty years previously when Dr. Charles Gosse had removed a "hard tumour" from the upper and outer angle of the right orbit. The right eye had never regained its normal position. For the last two years he had suffered from occasional diplopia, but no pain. The vision of the right eye with a - 2.5 spherical lens was  $\frac{5}{60}$ . The nerve head was pale and vessels were small. Cataractous changes were present in the lens. A hard and apparently immobile mass was palpable above and external to the globe. Vision was binocular except on looking up and out and movements were limited in these directions. Under ether an incision was made over the site of the tumour which was found to be encapsulated and to extend far back towards the apex of the orbit. I was unable to remove it whole, though the deeper half of the growth shelled out easily in one piece. The patient made an uninterrupted recovery without any alteration in the visual acuity of the eye which subsequently took up a practically normal position. On microscopical examination the tumour was reported to be fibroma. It was about the size and shape of a Brazil nut.

The remarkable features in this case were the extreme degree of proptosis, the length of the history and the small degree of visual disturbance resulting from its presence. It seems probable that the tumour was not entirely removed at the first operation.

#### Case III.

The third case was that of a man, aged sixty-eight years, who had noticed a swelling in the inner and upper orbital angle on the left side for two or three months. The swelling "came and went" and was intensely painful at times. On the occasion of his visit to me the palpebral fissure of the left eye was almost closed, the globe displaced forwards, outwards and downwards by a bone-hard swelling which was very tender to touch. The left nasal cavity was full of pus and the mucosa was congested. The ethmoidal region showed much hyperplasia. Under ether an incision was made over the site of the swelling. Pus welled up from the anterior ethmoidal cells which were exenterated by the suppurative process. The septum was resected and the anterior ethmoids drained by means of a piece of rubber tubing which was brought out through the anterior nares.

Subsequently an X ray examination showed all sinuses on the left side to be diseased and a second operation was performed. The antrum was drained into the nose, the sphenoid was opened and a few more diseased ethmoidal cells were exenterated and frontal drainage established. The patient made an uninterrupted recovery.

#### Case IV.

A young man (a station hand) who was under the care of Drs. Corbin and Burston, suffered from severe frontal pain of one week's duration. I was asked to examine his nasal sinuses. His temperature on the night previous to my examination was 40° C. (104° F.). No rigors had been noted, but frequent vomiting and epistaxis. There was a history of a slight chill ten days before, but beyond this there was no helpful history.

The consultation took place at 9 a.m. and at that time there was a slight puffiness over the right external canthus which had raised the question of frontal sinusitis. The nasal cavities were dry and crusted and examination with the rhinopharyngoscope revealed no abnormality. The pupils were equal and active. The patient complained of severe headache and vomiting was persistent. His tem-

perature was subnormal at this time. Four hours later I received a message from Dr. Burston that the patient was worse and we again visited him. The change in that brief space of time was remarkable and the bilateral exophthalmos, the congested and chemotic globes and the purple lids placed the diagnosis of cavernous sinus thrombosis beyond doubt. The patient died next day. The origin of the infection remains a mystery; the only possibility that occurs to me (in view of the nasal crusting) being an infection from the nasal veins through nose picking.

#### Case V.

A woman, aged fifty-four years, a patient of Dr. Bonnin, gave a history of attacks of pain over the right eye and occasional swelling of the lower lid and three months previously the right eye "became sore." She gave a history of having had a polypus removed from the right nose years ago and at times there occurred a sudden discharge of watery fluid from the nose, occasionally also blood and pus.

At the time of examination the right globe was distinctly depressed and proptosis had occurred. The upper lid was fuller than on the left side and there was an apparent divergence of the eyes. The orbital margin was thickened and the supraorbital notch (which was very distinctly palpable on the left side) was obliterated. There were no definite limits to the swelling. Transillumination showed an enormously distended translucent right frontal sinus, but complete darkness on the left. The right antrum was black and the left clear.

A tentative diagnosis was made of mucocele of right frontal sinus and purulent sinusitis affecting right antrum and possibly left frontal sinus. An X ray examination confirmed this. Both frontal sinuses were operated externally by Howarth's method and a radical (Luc Caldwell) operation was performed on the right antrum. The patient made a complete and very rapid recovery.

An interesting feature of the case was provided by the absence of the bony septum between the frontal sinuses. When the mucocele was opened, the pus from the infected left frontal sinus poured in, producing a curious resemblance to the broken yolk of an egg mixing with the clear white.

#### Case VI.

A young woman, aged twenty years, whom I saw at the request of Dr. Burston, gave a history of a cold a week previously, followed four days later by pain in the right eye which became swollen and red. She had severe headache; slight proptosis of the left eye had occurred and the lids were swollen and oedematous. The temperature was 39.4° C. (103° F.). As this case followed Case IV. at an interval of only two months, Dr. Burston and I were considerably perturbed. Examination of the fundi, nasopharynx and nasal cavities gave no helpful information and patient was sent to hospital for observation. The condition gradually subsided and the external appearance became normal, but a fortnight after our first consultation I was informed that she had become practically blind in the right eye, the condition having begun with slight haziness of vision a week previously. On examination vision was confined to perception of hand movements, but no changes were seen in the fundus.

An examination with the rhinopharyngoscope showed pus pouring from both sphenoids.

These were opened freely together with the posterior ethmoidal cells on the right side, which were extensively affected. A fortnight later the vision was  $\frac{5}{60}$  in the affected eye and a month later still she could see letters of  $\frac{5}{60}$  and there was no sign of pus in the nose.

This case illustrated the great value of examination with a rhinopharyngoscope and converted me to its use as a routine.

#### Case VII.

A youth, aged fifteen years, had been treated by Dr. Holder for a severe cold. Dr. Holder asked me to see him because two days previously his left eye had become puffy. On examination the globe was congested and chemosed and there was considerable proptosis with blurring of vision. No rigors had occurred and there was no history of headache. The temperature was raised. Nasal exam-

ination showed much blocking on the left side of the nose and some pus. The X ray examination revealed haziness of the anterior ethmoidal cells and next day about two cubic centimetres of pus were evacuated from the ethmoid (posterior cells being mostly affected) through a crescentic incision at the inner angle of the orbit.

The wound was packed daily and intranasal treatment was kept up by means of inhalations, douching and cocaineization.

The condition subsided completely without further operation and there is now no sign of pus in the nose. The case is of interest as illustrating that a relatively small focus of suppuration can give rise to pronounced external signs.

#### Case VIII.

A boy, aged twelve years, had been complaining that his "eyes hurt him" for a week or two before I saw him. Two days previously he had complained of feeling ill after his bath and his temperature rose. Next day his right eye had become puffy and Dr. Hayward asked me to see him. There was no history of injury. On examination his temperature was 40.5° C. (105° F.) and he was irritable and irrational.

He was sent to hospital immediately and the orbit was explored to its apex through an incision at the inner and upper angle. No pus was obtained. Whilst under the anæsthetic he was examined with the rhinoscope. There was a little cloudy mucus in the nose, but no inflammation of the mucous membrane.

The wound exuded sero-sanguineous fluid and his temperature hovered between 38.9° C. and 40.5° C. (102° F. and 105° F.) for four days. He was very restless and screamed a great deal, but was rational at times. Dr. Cudmore saw him with me and a second exploration *via* the external orbital angle produced about two cubic centimetres of pus from the depths of the orbit. His condition did not improve and gradually the process extended down the face and up the forehead until the whole of that side of his head looked like a huge carbuncle.

He died exactly a week from the day I first saw him. The source of infection remains a mystery.

#### Case IX.

A young woman, aged twenty-one years, who was sent to me by Dr. Pryor, gave a history of a recent influenzal attack preceded by a mild otorrhoea from the right side for two months. Recently the ear had become painful and there was much thick, purulent discharge.

On examination the patient was pale and collapsed. There was a profuse discharge of thick pus from the right ear and some granulations were visible on the superior canal wall.

The mastoid was opened the same day and was found to be cellular and widely infected, though there was very little actual pus present. The lateral sinus was explored and was normal in appearance. The wound was packed and closed in the upper half. All went well for twenty-four hours when the temperature rose to 37.8° C. (100° F.) and two days later there was much purulent discharge and the temperature was still raised. Next day there were pain and fullness below the sterno-mastoid, so the wound was opened up and the incision carried down along the muscle for drainage. The next day she was better, but complained of pains in her eyes and photophobia. The next day she had a rigor and vomited and her eyes became puffy. The fundi showed some tortuosity of the vessels and venous engorgement. Her condition became progressively worse; rigors occurred frequently and the proptosis became more and more pronounced until she died eleven days after her arrival in hospital from thrombosis of the cavernous sinus. It should be noted that apart from a moderate rise of temperature the first signs of sinus thrombosis (that is, rigor and vomiting) occurred only twenty-four hours before the first symptoms of cavernous sinus involvement (puffiness of the lids). This, coupled with the fact that the lateral sinus was apparently normal when inspected, makes it practically certain that the jugular bulb was primarily infected. I was supported in this opinion by Drs. Cudmore, Shorney and Hone who saw her with me at the parents' request.

An extraordinary feature of the case was the euphoria exhibited by this patient. Almost up to the day of her death she was quite conscious and happy in spite of her headache and was constantly inquiring when she could leave hospital.

#### Case X.

The patient was a ship's butcher whom I was called to see by the ship's doctor. The history given to me was that the patient had been suffering from tonsillitis and quinsy, but had practically recovered, following a spontaneous rupture of the abscess. His temperature had been down for two or three days when it suddenly shot up to 40° C. (104° F.) and he developed severe headache and restlessness. When I saw him he was unconscious, but resented the slightest interference, throwing himself about in his bunk with great violence. It was impossible to conduct a general examination much less to inspect his throat and nasal cavities.

His eyes presented the typical appearance of cavernous sinus thrombosis and I gave it as my opinion that his condition was hopeless.

Three days later he blew some pus from his nose which made the diagnosis of infection of the posterior sinuses a strong possibility. His temperature was swinging in type and he was violent, though unconscious most of the time. Five days after the first consultation he was landed at Fremantle where he was cared for by Dr. Douglas Kerr. By that time meningeal symptoms had supervened and the cerebro-spinal fluid was turbid. He died a few days later.

It is significant that in this case the path of infection was almost certainly from the pharynx to the posterior nasal sinuses and so to the cavernous sinus.

In Case IX. on the other hand an extension occurred direct from the jugular bulb, whilst in Case IV. there was probably an infection through the nasal venous channels, three cases with a different source of infection in each. Another point of interest is furnished by a comparison of the mental states of these patients. The patient in Case IX. was conscious almost to the end and lived for a week in no apparent mental distress in spite of headache, whilst the patient in Case IV. was dead within twenty-four hours of the first localizing signs. The patient in Case X. on the other hand lived for ten days, delirious and in obvious agony, in spite of his obliviousness to his surroundings.

#### Conclusion.

Two or three other conditions which I have seen have produced proptosis, but unfortunately I cannot lay my hands on the notes of the cases.

One was an instance of Mikulicz's disease which was quite typical in everything except its response to treatment, as the patient recovered rapidly under potassium iodide.

Another was an advanced case of malignant disease affecting the left antrum. The condition was inoperable.

A third was a case of orbital periostitis following injury, which resolved rapidly under treatment.

I need hardly say that I do not consider any of these cases as unique, nor do I imagine that they illustrate more than a moderate percentage of the possible causes of proptosis. My object in bringing them under your notice is to illustrate what a serious view is to be taken of proptosis in the light of my own experiences.

#### THE PATHOLOGY OF TWO CASES OF SUDDEN DEATH.<sup>1</sup>

By OLIVER LATHAM, M.B., Ch.M. (Sydney),  
Pathologist, Laboratory Department of Mental Hospitals,  
Government of New South Wales.

My excuse for bringing these two cases under your notice this evening lies in the fact that while in both the

<sup>1</sup>Read at a meeting of the Section of Neurology and Psychiatry and the Section of Medicine of the New South Wales Branch of the British Medical Association on November 25, 1926.



actual lesion was a small cerebral hæmorrhage the size of a cherry stone, yet the underlying pathology differed widely, as revealed by microscopical examination.

The first hæmorrhage is undoubtedly in a small cerebral nœvus, while the other is associated with a cerebritis accompanied by microscopical collections of mononuclear cells (abscesses) in cerebrum, cerebellum, intestine, liver and kidney. I admit to feeling surprised at the untoward results from such small hæmorrhages.

#### Case I.

J.S., aged forty-four years, was admitted to Newcastle Hospital on August 6, 1926, in a semi-comatose condition, having taken a series of epileptic fits at 3 a.m. that morning. He was resistive, the only history available being that headache had persisted during the previous three weeks. On examination the pupils reacted equally to light and accommodation, the knee jerks were normal, no obvious paralysis or paresis was present, the systolic blood pressure was 135 and the diastolic 75 millimetres of mercury. The vascular system was clear and lumbar puncture gave ten cubic centimetres of clear fluid not under increased pressure. The patient had vomited several times after admission.

On August 11, 1926, the patient had seizures of about a minute's duration with clonic movements of both eyelids. The urine was normal save for a trace of albumin, one or two red cells and casts. No response was obtained to the Bordet-Wassermann test in either blood or cerebro-spinal fluid. The patient died in a fit.

*Post mortem* notes from Dr. Ethel Byrne state that the cranial contents were especially examined for signs of hæmorrhage, the brain after fixation in "Formalin" being sliced latero-medially. All that could be discovered was the small hæmorrhage at the junction of the right frontal lobe with the precentral gyrus about 2.5 centimetres (one inch) from the mesial surface. A section showed endothelial lined spaces filled with blood, some of which had ruptured, the tumour resembling a cavernous angioma of the liver. After consultation with Professor Welsh and Dr. Inglis a diagnosis of hæmorrhage into a cerebral nœvus was made.

The only previous records I had of these conditions I obtained from references in certain numbers of the *Review of Neurology and Psychiatry*,<sup>(1)</sup> one of which describes the case of a man who died suddenly with history of nagging pains in the head and there the autopsy revealed a blood clot four by two centimetres in the right cerebellar hemisphere coming from an angioma of the right cerebellar peduncle. The vessel walls showed some hyaline degeneration.

Another of these reviews gives some eight or nine cases chiefly occurring in connexion with the cerebral ventricles. My attention had been drawn to this subject by Dr. Keith Inglis who had often come across like states in association with studies he had been making on *spina bifida* and such-like congenital conditions. Angioma in the central nervous system seems much more common in the spinal cord. I have had four cases to report. These include one received only this afternoon from Dr. Poate. Severe hæmorrhage occurred during removal and the tumour appeared to arise from the pia-arachnoid and to invade the cord itself. Its vascular origin was determined only from the examination of one area wherein the cells forming the tumour could be made out arising from a typical collection of blood vessels. Elsewhere masses of endothelial cells alternated with endothelial lined blood cysts varying in size from a lymph space to naked eye dimensions and of course large extravasations of blood.

And in a recent number of *Brain* Percy Sargent<sup>(2)</sup> has collected several cases some dating from 1887, including one in which skin nœvi were present at the same spinal level. He says of them:

Among the lesions which may give rise to symptoms closely resembling those of spinal tumours is one consisting of a more or less localized mass of blood vessels nœvoid in character lying between the pia and the arachnoid.

Some of these nœvi had invaded the cord causing distortion, hence operative measures which usually consist

of tying off the vessels are not always successful with what might look like an innocent angioma. Sargent gives four cases of his own. Sometimes the onset of symptoms are acute, at other times twenty-four years have intervened between the attacks, the symptoms often revealing the cord segment involved. They are mostly venous, but he gives experiences of the arterial type and Elseberg refers to a case in which both types coexisted. The cases which I have investigated, mostly exhibit the blood vessel stage (plexiform angioma?). However, even the latter may be associated with distortion or myelitis or even as above with invasion of the cord by the tumour which may have progressed in malignancy so as to exhibit masses of cells in parts revealing no tendency to form blood-holding lumens. References in literature to cerebral angiomas are scant; Bland-Sutton<sup>(3)</sup> devotes a paragraph to the subject.

#### Case II.

##### *Acute Generalized Encephalitis Lethargica?*

My second case while dramatically sudden in onset presents much more food for controversy, as the lesions, while more manifold, are less orthodox.

E.M., a female patient, aged thirty-seven years, unmarried, had been feeling quite well and while at work became suddenly unconscious and was conveyed to the Royal North Sydney Hospital where she died next day without regaining consciousness. There was slight head retraction and the pupils did not react to light. There was no rigidity and her knee jerks were almost absent.

*Post mortem* notes from Dr. Ross state that no foci of suppuration were found nor pus in the abdominal cavity. The organs were sectioned and examined by Dr. Walton Smith. The spleen was enlarged and friable. The kidneys were the site of acute nephritis with small abscesses (mononuclear cells) and masses of organisms. The liver was acutely inflamed, with small collections of leucocytes (mononuclear cells). The same conditions obtained in the intestines, the whole suggesting a pyæmia.

The following additional data available reveal that the cerebro-spinal fluid was sterile on culture and did not react to the Widal Bordet-Wassermann tests; the cell count was normal; no tubercle bacilli were seen; the total protein was 0.6%; the chlorides were 0.702% and glucose 90 milligrammes in one hundred cubic centimetres; no pus cells were seen in a smear from the brain surface.

The brain was handed to us in 10% "Formalin" solution. On treatment with alcohol it appeared deeply congested and on section a hæmorrhage appeared to have occurred between the gyri of the right occipital lobe. On section it was recognized that the hæmorrhage had penetrated the underlying cerebral cortex which had reacted and the pia endothelium had proliferated. This suggested further sections being obtained from the frontal, motor, hippocampal, lenticular, optic thalamic and brain stem regions as well as the cerebellum. Nissl sections of these parts showed widespread reactions such as thickening and infiltration of the pia with mononuclear cells, subpial hæmorrhages, proliferation of neuroglia, neuronphagia and perivascular infiltration and a few mononuclear abscesses in the cerebellum as well as structures like masses of streptothrix (fairly often noted in the cerebral vascular system) and other germs. The nerve cells had been remarkably well preserved from distortion by the cedar oil-legroin method of paraffin embedding, allowing us to note that the majority of the neurones were quite healthy; save where hæmorrhage had actually destroyed tissue, but little obvious damage was visible. Some neurones were degenerated in the red nucleus and in addition gave evidence of neuronphagia and many cells in the optic thalamus were filled with pigment.

Several pathologists of repute considered that the state was pyæmic and that an acute toxæmia would account for all the clinical manifestations, but the clinicians thought otherwise and the diagnosis of *encephalitis lethargica* seemed more likely to them. The fact that the cerebro-spinal fluid was normal, especially as regards cell count, sugar and sodium chloride content and the absence of culture results, seems to rule out the ordinary septic and tuberculous infections. The fact that the so-called microscopical



abscesses practically everywhere were almost entirely composed of mononuclear cells and the recognized tendency of the virus of *encephalitis lethargica* to invade the abdominal contents, suggest that this case might be one of an acute generalized infection by the organism of *encephalitis lethargica*.

#### References.

- (1) Percy Sargent: "Hæmangioma of the Pia Causing Compression Paraplegia," *Brain*, Volume LVIII., Part II.
- (2) Winn Wirgmann: *Review of Neurology and Psychiatry*, August, 1914, quoting "Angioma in Cerebellar Peduncle: Fatal Intracranial Hæmorrhage," *The Lancet*, June 20, 1914, page 1746.
- (3) John Bland-Sutton: "Tumours, Innocent and Malignant," Sixth Edition.

### EXOPHTHALMIC GOITRE.

By O. A. A. DIETHELM, M.B., Ch.M. (Sydney),  
Honorary Physician, Saint Vincent's Hospital, Sydney;  
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Hospital, Sydney.

#### Clinical History.

A SINGLE woman, forty-six years of age, was admitted into Saint Vincent's Hospital under my care on August 25, 1926. She enjoyed good health until six months ago, when she had a severe attack of tonsillitis. After this she was slow in recovering, got worried and easily upset for no particular reason. Then she gradually noticed a swelling in her throat and found that her eyes were becoming prominent; she was becoming very "nervous" and also used to get attacks of palpitation and sleepless nights.

She had suffered from enteric fever twelve years previously and from pneumonic influenza seven years ago. She had hæmorrhoids removed fourteen years ago. She suffered from two attacks of tonsillitis.

The family history was good. On admission she was pale and poorly nourished, very timid and nervous and exceedingly emotional; she was very excitable and restless. No dental sepsis was present. The tonsils were unhealthy and septic-looking. These are a possible focus of infection. Extreme double exophthalmos was present, the sclera showing very distinctly above the cornea and below the upper lid in each eye while the patient was looking straight ahead. Von Graefe's, Moebius's and Stellwag's signs were all present. The pupils were equal and reacted to accommodation and light. The thyroid was uniformly enlarged and pulsated freely. Fine rhythmic tremor of hands was present. The vasomotor system was very active. She perspired freely and flushed deeply at the slightest provocation. The heart was enlarged. The pulse rate was 130 to 140 in the minute and regular in rhythm. The volume and tension were moderate. The blood pressure was slightly subnormal.

After being under observation for a few days, iodide of potash 0.06 gramme (one grain) was given twice daily. Potassium bromide was given at night. She was put on a good general diet, but excluding red meat and made up dishes, extractives *et cetera*. She was not given too many calories, but was put on sufficient for a good maintenance diet. The patient was confined to bed at first. The dose of iodide of potash was kept constant for three weeks and was then suspended for a week. It was then resumed and continued for three weeks. The dose was then reduced to 0.03 gramme twice daily and this dose has been continued ever since.

#### Progress.

During the first three weeks her clinical condition was definitely improved, especially during the first ten days. She was much more comfortable and less timid, was sleeping better and after the first week did not require any bromide. Her pulse rate dropped to 88 and it was quite evident from her condition that her basal metabolic rate had dropped greatly and was probably not very raised.

When it was decided to suspend the iodide and omit it

altogether, the result was a return and a definite exaggeration of all her symptoms. These symptoms were improved when the iodide was resumed, though she did not reach the same general grade of improvement noticeable in the first two weeks of treatment with the iodide of potash. She remained in this state for three weeks, when the dose of iodide was cut down to 0.03 gramme twice a day. A slight further improvement was noticed and she has continued with this dose. Although her improvement is not so pronounced as took place in the first few weeks of treatment, her clinical condition is good. The apex beat was now very localized and in the normal position and the pulse varied from 90 to 100 and was regular in rhythm, the rate not being affected when the patient was up on the lounge. She did not get dyspnoic at all. She still exhibited some nervous hyperexcitability, though it is now only of a very moderate degree.

Her exophthalmos is distinctly improved and is not conspicuous. Her weight has increased and the patient states that she feels well.

#### Comment.

I am demonstrating this case to show the effect of iodine on hyperthyroidism clinically and to compare the effects with the results published in the *Quarterly Journal of Medicine* of October, 1924, by Cowell and Mellanby, who conducted an investigation from the Royal Infirmary, Sheffield, and the Department of Pharmacology in the University on behalf of the Medical Research Council on the effect of iodine on hyperthyroidism in man. The clinical results obtained here are similar to the results obtained by Cowell and Mellanby in their series of cases and observed for some months. Iodine was given in the form of iodide of potash. The diet was a standard diet of about 2,000 calories. No other drug therapy was used except an occasional dose of potassium bromide at night.

As in Mellanby and Cowell's case, the giving of small doses of iodide has resulted in a distinct clinical improvement. As already pointed out the dose of iodide was cut down for a few weeks and then increased again. She seems to be better when taking 0.06 gramme twice a day. This case seems to agree with the results claimed that small doses of iodide produce distinct improvement. The amount of iodide does not appear within certain limits to control the rate of improvement noted in the early stages of treatment. Thus the giving of 0.6 gramme (ten grains) of iodide of potash daily seems to be followed by the same rapid improvement as has been observed when 0.06 gramme is given. Cowell and Mellanby believe that when small doses are given the return of symptoms tends to be longer delayed and less severe than when larger doses are given. They have not definitely determined the minimum quantity of iodide that will exert a demonstrable effect, but it is less than 0.03 gramme daily.

As regards the immediate results in practically all cases, improvement occurs and reaches a maximum in ten to twenty days after beginning and is then frequently followed by a gradual return of symptoms which, however, usually do not attain their former severity while the iodine is taken. The withdrawal of iodide from patients who have been receiving it continuously for several months is followed by an exacerbation of symptoms which can be relieved by once more administering iodide. Treatment by iodides of patients with hyperthyroidism of all types is recommended as an adjunct to other forms of medical and X ray treatment and it is suggested that a course of iodide administration is of value as a preliminary to surgical treatment (similar to the administration of Lugol's solution as advocated by Plummer in the Mayo Clinic).

From the practical point of view Cowell and Mellanby believe that the giving of small amounts of iodide to patients suffering from hyperthyroidism is a valuable aid to other medical treatment and it is possible that the doses of the order of 0.006 gramme (one-tenth grain) daily will prove to be the most suitable in the majority of cases. They had no grounds for considering the treatment a curative one, but patients in most cases kept distinctly improved while taking the iodide, though not to the same extent as the maximum degree of improvement reached usually about one or two weeks from beginning of treatment.

<sup>1</sup> Read at a meeting of the New South Wales Branch of the British Medical Association on October 14, 1926.

From the standpoint of physiology it is not yet possible to discuss the bearing of the part played by iodine in metabolism apart from the fact that it is a constituent element of thyroxin. It seems certain, however, that iodine influences metabolic change in ways not at present quite understood.

### HERPES OPHTHALMICUS.<sup>1</sup>

By J. B. LEWIS, M.B., B.S. (Melbourne),  
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Adelaide.

A PATIENT, sixty-five years of age, was admitted on May 9, 1926, to the ophthalmic ward at the Adelaide Hospital, complaining of pain over the left side of the forehead and in the left eye. He said that two days after the pain first appeared blisters came over the left side of the forehead, the pain increased and his eye became red and painful; he dreaded the light and the eye watered.

On examination the left upper and lower lids were swollen and there was some chemosis of the upper *conjunctiva bulbi*, but no staining. The cornea was clear. Extending from the left eyebrow to the left occipital bone over the parietal bone were papular pustular lesions varying from the size of a pin's head to that of a pea.

About two weeks after admission the centre of his cornea showed a transverse striation in the anterior part of the *substantia propria* and covering an area of four millimetres in circumference. This is now subsiding. There is now little pain, but the whole of the area covered by the eruption feels numb.

Compared with a recent case of the same disease the following points of similarity and difference were noted.

In both cases the rash extended far beyond the area of cutaneous distribution of the ophthalmic division of the fifth nerve, as a diagram from "Cunningham" illustrates this point.

In both cases the rash on the vertex of the scalp reached to within a short distance of the upper border of the occipital bone.

In the first case the end of the nose was affected and there were bullae on the cornea which left a thick opacity and some insidious scleritis with chorioid showing through the thinned sclera at certain points. The pain persisted for some months after the subsidence of the eruption. In the last case there were no signs of disease on the nose, but the cornea was anæsthetic and the transverse keratitis showed corneal involvement.

Authorities differ as to whether the cornea can be affected in the absence of involvement of the naso-ciliary nerve as shown by an eruption at the tip of the nose. Hutchinson says that the eye scarcely ever suffers much when the nose is not affected. Bowman, on the contrary, holds the opposite view. In both of the cases the cornea was affected, but only greatly so in the case in which the nose was involved.

The distribution of the ophthalmic division of the fifth nerve is often different on the opposite sides of the face and Whitnall states that the internal nasal branches may be absent altogether. This may explain the difference between various observers and the absence of the external nasal branch may account for the involvement of the cornea occurring in cases without any eruption on the nose.

## Reviews.

### ABDOMINAL SURGERY.

SIR BERKELEY MOYNIHAN'S work on "Abdominal Operations" is too well known to surgeons to need any detailed description.<sup>2</sup>

<sup>1</sup>Read at a meeting of the Eye, Ear, Nose and Throat Section of the South Australian Branch of the British Medical Association on June 1, 1926.

<sup>2</sup>"Abdominal Operations," by Sir Berkeley Moynihan: Volumes I. and II., Fourth Edition, Revised, 1926. Philadelphia: W. B. Saunders Company; Melbourne: James Little. Royal 8vo., pp. 1217, with illustrations. Price: £5 net.

The fourth edition of this work has been published and has received a very drastic revision. Many new chapters have been added. One of the most interesting is that which deals with surgical technique. The author remarks that "this is the most worthy, but" he fears "the least regarded nowadays of all the essentials of good work." Yet, as he says, "it is the one that most surely crowns our efforts with success." In this chapter he gives the most detailed description for the preparation of the patient and for the organization of the surgical service of the theatre. On the whole this chapter will be found full of most useful information not usually found in a surgical textbook and certainly of great value coming as it does from such a master of his art. It will be an inspiration to any surgeon to standardize and improve his theatre work.

It is significant as evidence of a general, perhaps retrogressive trend in modern surgery that in two places in his book a surgeon of the calibre and integrity of Moynihan should consider it necessary to make statements like the following: "Surgery today is being practised by too many light-hearted and incompetent surgeons who have neither sought in due service to acquire a mastery of their craft nor have learned from the experience gained by long association in hospital work when an operation should be done, when left undone, how make it safe, how made to fall lightly upon a patient already afflicted—it may be by mental no less than by physical distress." It is to these and such as these that this work should appeal, for in it the author makes surgery a religion as well as an art.

The chapters on gastric operations have been rewritten. Gastro-enterostomy does not take the place in gastric surgery that it occupied in his previous edition, but is totally replaced by partial gastrectomy for almost all gastric ulcers. It still remains the most suitable operation, however, for duodenal ulcer. Moynihan, very appropriately to its modern use, lays special emphasis on the great precautions and surgical judgement necessary in the performance of gastro-enterostomy and he attributes most of the failures in this operation to want of precision in this respect. He analyses the causes of many unsuccessful gastro-enterostomies and points out why they are unsuccessful and the surgeon will find much practical advice and many useful hints in this chapter.

The author has added new procedures and new illustrations to the chapter on gastrectomy. He now regards the short loop, antecolic, Poyla method as the safest and he gives the extraordinary low mortality of 1.5% for this operation when it is done for gastric ulcer and 9% when it is done for gastric carcinoma.

There is much interesting up-to-date information about the ætiology of cholelithiasis. The rôle of hypercholesteræmia and its significance in diagnosis is surveyed in relation to his clinical experience.

In speaking of surgical treatment of cholelithiasis Moynihan lays great stress on the fact that the surgery of the gall bladder is extremely difficult and requires particular knowledge and special skill. He says that one-quarter of the patients on whom he operated for cholelithiasis, had a previous operation for this disease. "This," he remarks, "is an argument, not against surgical treatment of the disease, but against an attempt by the inexperienced or untrained operator to deal with conditions which may tax all the energies and call out all the reserves of even the most proficient." "Cholecystectomy," he says, "if rightly performed is as safe as drainage of the gall bladder and the after results are far more satisfactory" and with this most surgeons will agree.

His large experience on secondary operations for injuries to the common duct following cholecystectomy makes this chapter very interesting. Ingenious methods of repair of injuries to the common duct which have proved satisfactory are outlined and illustrated. He prefaces, very appropriately, this chapter with an abridged account by Mr. E. R. Flynn on anomalies of the hepatic artery and bile ducts; this in itself is a classic.

This book is a compilation of sound surgical principles and wisdom and of full descriptions and beautiful illustrations of operations that have been well tested and found reliable by a master. Surgeons will find it a most trustworthy book for reference.

## The Medical Journal of Australia

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### A Retrospect.

#### Oto-Rhino-Laryngology.

THE study of otology and laryngology implies much more than the application of the principles of pathology and morbid anatomy and the adaptation of surgery to the organs of hearing and of speech. It involves a profound knowledge of the physics of sound, an understanding of statics, the discovery of the physiology of hearing and of the production of the voice, the mastery of the mental and nervous processes concerned in the interpretation of sounds heard and in the construction of spoken words and uttered sounds. The otologist who restricts his activity to surgical manipulations, is unlikely to advance the science of his specialty. It is not surprising that progress is relatively slow in so complicated a study as that of hearing. No new physiological facts in connexion with hearing have been discovered during the year 1926. But there has been some advance as a result of much experimental investigation into the mechanism of the structures of the inner ear and particularly of the cochlear inclusions. A great deal of this work has been carried out in Germany and Holland. It promises to lead to a more accurate conception of the physiology of the several internal structures of the ear in the near future. Gray has made observations in deaf-mutes and has endeavoured to correlate these observations with the deviations from the normal of the temporal bones. Bunch has described three types of lesions in otosclerosis, while Frey has adduced evidence to support the hypothesis that otosclerosis is a constitutional disease dependent on excessive activity of some of the ductless glands. He claims that he has been able to arrest the retrogression of hearing by stimulating the areas of certain ductless glands, by the parenteral exhibition of albumin and by the injection of certain vaccines. In his experience and in that of many other otologists local treatment is valueless in otosclerosis.

Electricians have recently found it necessary to construct electrical circuits for the purpose of raising or of lowering sounds at will in connexion with wireless communication. Some otologists in America have adapted these electrical apparatus in order that the range of audible sound may be accurately tested. An endeavour is being made to construct an apparatus by means of which all sounds can be converted to any desired pitch. It is held that if this can be achieved, it will be possible to attune all sounds to a pitch at which the audibility of a deaf person is greatest.

In the sphere of rhinology the diagnosis of lesions of the nasal cavities and the sinuses has been advanced by the more frequent use of bismuth salts or iodized oil prior to X ray examination. The former are insufflated in a dry condition, while the oil is injected for this purpose. Norrie, Jobson and Freil advocate the treatment of chronic suppuration in the ear and nose by zinc ionization. Barnett claims to have obtained good results in non-suppurative middle ear deafness by ionization with potassium iodide and sodium salicylate.

Intracranial sepsis due to nasal sepsis is being closely studied, especially in Edinburgh. A full report of two cases has been published from the Royal Infirmary. Further studies will be published later. The paths of infection are traced, their mode of onset is investigated and the nature of the pathological processes is elucidated as far as possible during life and in the *post mortem* room.

Diathermy has been employed in the treatment of neoplasms of the nose and throat in every country and the consensus of opinion is favourable.

E. W. Gutteridge has described two new methods of operative treatment for mastoid suppuration. He recommends these operations in the place of the usual mastoidectomy operation, as they are devised to insure complete epithelization of the labyrinthine wall.

Irwin Moore's historical account of peroral endoscopy is a valuable contribution to laryngological literature.

#### Urology.

The Gordon Craig Fellowship in Urology and the urological research laboratory established at the University of Sydney by Dr. Gordon Craig have



been in existence for a sufficiently long time to enable those in association with this undertaking to form an opinion concerning its value. It is proving itself to be an important accession to the Medical School and will certainly lead to the evolution of new ideas and the better understanding of old problems in the future.

The most important work published in Australia on a subject included in urology is an article by C. Gordon Shaw on tuberculosis of the uro-genital organs. He has given an admirable account of tuberculous disease of the kidneys and has reviewed his experience in Melbourne of this disease. If treated by competent surgeons renal tuberculosis is a relatively benign affection. In contrast with this not very fatal form, tuberculosis of the genital organs yield a dismal picture. Closely connected with this subject is the observation of Zimmermann that tubercle bacilli may pass through the renal filter and appear in the urine without producing a recognizable lesion in the kidney. The clinician is faced with a somewhat difficult problem when he discovers tubercle bacilli in the urine. There may be an early tuberculous lesion of the kidney without any enlargement of the organ or other physical sign indicating its presence. If tubercle bacilli can pass through the kidney without producing a lesion, an early lesion may evade detection. Zimmermann advises the urologist to regard every kidney as tuberculous whose urine contains tubercle bacilli.

A considerable amount of work has been carried out in connexion with the treatment of pyogenic infections of the urinary organs. Braasch finds that the kidney is often infected from some distant focus by way of the blood stream and that the urinary infection spreads downwards. The renal condition may disappear before the cystitis is cured. He and several other American urologists favour the intravenous injections of "Mercurochrome" in relatively small doses. W. F. Briggs and N. Blaustein claim good results from "Argyrol." Blaustein regards it as highly important to lessen the alkalinity of the urine in these infective conditions of the bladder and recommends ammonium chloride for this purpose. When the ammonium salt fails, he employs an emulsion of *Bacillus bul-*

*garicus*. "Hexyl-Resorcin" has been condemned by many urologists. V. Leonard attempts to explain its failure by pointing out that the bactericidal power of an antiseptic fluid is decreased if its surface tension is raised. By exhibiting sodium bicarbonate or by increasing the amount of fluid ingested the urine is diluted and the surface tension is raised. H. F. Helmholtz and R. S. Field have compared the therapeutic value of "Hexamine," "Mercurochrome" and "Hexyl-Resorcin" and have found that "Hexamine" is the most reliable of the three.

N. P. Rathbun has paid close attention to the diagnosis of ureteric stricture. He relies largely on the shadows in the ureterograms and states that ureteric stricture was discovered by this means in ninety-two patients out of 739 who were referred to his clinic for a complete urological examination. R. C. Graves employs a 12% solution of sodium iodide and often adds thirty-three milligrammes of mercuric iodide to each hundred cubic centimetres of solution to render it less irritating and more suitable for pyelography. W. A. Frontz holds that in the endeavour to interpret a pyelogram the facts should be remembered that the renal pelvis undergoes spasmodic contractions and that the ureter is a distensible canal. A renal neoplasm or an obstruction of the ureter may be falsely diagnosed unless care be exercised. F. Leguen has introduced a method of examination which he calls pyeloscopy. He fills the renal pelvis with a 30% solution of sodium iodide and examines the patient with the fluoroscopic screen. He has noted the appearance of an inverted cone-shaped prolongation downwards of the renal pelvis; he terms this shadow the ureteric bulb.

F. Hinman and M. Vecki have investigated the contents of a closed hydronephrotic sac. They find that the fluid is neither cumulative nor stagnant. Fresh fluid is secreted continuously by the kidney and the excess is removed by reabsorption into the renal veins. M. Bouchard has produced evidence of the loss of physiological function of the nervous and muscular mechanisms after transverse division and repair of the ureter.

The estimation of the functional integrity of the of the kidney continues to be a source of investi-

gation. While little that is new, has been discovered during the past year, the observation of Cohen, Dodds and Webb deserves mention. They noted that in prostatic obstruction the non-protein nitrogen and uric acid contents of the blood are raised when the renal function is disturbed, while the urea value forms a much less reliable index of the condition of the kidneys.

#### Morphology.

The review of the work accomplished during the past year in the realm of morphology must begin with a reference to Davidson Black's anthropological research. He has accumulated further evidence regarding the origin of man in Central Asia, human remains having been discovered in tertiary deposits. This follows on the discoveries of the third Central Asiatic Expedition under Andrews who found certain cretaceous mammalian skulls in Mongolia. These skulls are of great importance in the study of vertebral palæontology.

Harrison and Weeks have published some valuable work on placentation in reptiles.

The nerve supply of muscles has occupied the attention of anatomists for a considerable time. H. S. D. Garven has studied the muscles of the hedgehog and by employing the gold chloride method of staining, he has confirmed Boeke's findings of accessory nerve fibres which are sympathetic in origin. They end on muscle fibres which are supplied in addition by medullated nerve fibres. H. J. Wilkinson and A. N. Burkitt have described non-medullated nerve ending in fat cells. While their work is of the nature of a preliminary communication, the evidence presented is so clear that they seem to be justified in suggesting that the nerve fibres have some regulatory influence upon the activity of the fat cells.

H. H. Woollard has done work on the distribution of the nerve ganglia in the heart. A. Kuntz and A. H. Kerper have carried out some highly important work on the sympathetic innervation of voluntary muscle. They have confirmed Royle and Hunter's findings in a manner that admits of no further doubt. By means of an ingenious device they have demonstrated graphically that plastic tonus is maintained by sympathetic innervation. C. H. Frazier and E.

Whitehead have thrown more light on the development and structure of the Gasserian ganglion and have pointed out that by conserving the motor root in the surgical treatment of trigeminal neuralgia mastication is not impaired and that the cosmetic results are improved if the sensory roots are partially and not completely removed. Windle has also done useful work on the distribution of unmyelinated nerve fibres in the trigeminal nerve of the cat.

G. H. S. Lightoller and A. N. Burkitt have published the first part of their work on the facial muscles of the Australian aborigines. This work, the details of which do not lend themselves to a summary, will take its place as a standard. J. Shellshear has continued his studies of the brain of the Chinese.

G. M. Higgins has published a description of the biliary tract of the rat and certain other rodents. The rat has no gall bladder, while the mouse has one. In the rat and other rodents without a gall bladder there is an intrahepatic compensatory mechanism for the concentration of the bile and possibly for other functions of the gall bladder.

R. H. Bowen has made a careful investigation into the significance and function of the Golgi apparatus. It was studied in animal cells. Whether it exists in plant cells has not yet been determined with certainty. It is said to be the synthetic centre for the production of those cellular substances that are spoken of as cell secretions.

Brief reference may be made to the study of the histological changes that take place in the vaginal mucosa of the sow in relation to the œstral cycle and to the observations of postnatal growth of the kidney.

J. M. Petrie has demonstrated that the intercellular substance of epithelial tissue contains a potassium salt by means of which it can be rendered visible. Sodium-cobalt nitrite reacts with the potassium compound to form sodium-potassium-cobalt nitrite, a yellow crystalline substance which can be recognized without difficulty. If the preparation be treated with ammonium sulphide, the cobalt in the nitrite is claimed to form the black cobalt sulphide. The microchemical reaction is sharp and very distinct.

## Abstracts from Current Medical Literature.

### PÆDIATRICS.

#### The Hydrogen Ion Concentration of the Stools of New-Born Infants.

R. C. NORTON AND A. T. SHOHL (*American Journal of Diseases of Children*, August, 1926) discuss the hydrogen ion concentration of the stools of new-born infants. Specimens from twenty-seven breast fed babies were examined. Twenty-one were exclusively breast fed, six later received supplementary feeding of cow's milk with added carbohydrate. The pH changed from an average of pH 6.1 on the day of birth to an average of pH 4.9 on the ninth to the fifteenth day inclusive. From the sixth day the pH tended to maintain a constant level, averaging from pH 4.8 to 4.9. The extreme range of the determinations made on and after the sixth day was pH 4.3 to 5.3. The average pH drops smoothly and gradually from the first to the sixth day. A change occurred in the colour and character of the stools, coincident with these changes in acidity. The specimens passed from the dark brownish-green colour and viscid consistency characteristic of meconium to the golden-yellow, characteristic of stools following breast milk feeding, by the fourth or fifth day. The effect of supplementary feeding of cow's milk with added carbohydrate was noted in four cases. The pH changed uniformly and promptly towards greater alkalinity. Another infant, artificially fed from birth to the seventh day, whose stools during this period varied from pH 5.6 to 6.1 was put on exclusive breast feeding on the eighth day. The stool pH on the twelfth day was 5.1. The main factors which influence the acidity of the stools are bacterial flora, the protein, the carbohydrate and the fat content of the diet, alkalinity of the diet and starvation. The intestinal tract is sterile at birth, but directly afterwards a bacterial flora becomes established. Some authors hold that the type of predominating organism is the determining factor of the acidity of the intestinal contents. The most modern view is on the contrary that the acidity determines the type of intestinal flora. The authors conclude that neither protein, fat nor carbohydrate alone affects the acidity of the stools. The base content of the diet seems to be a significant factor in determining the acidity of the stools; the greater the base content, the more alkaline the stool. Thus foodstuffs producing fatty acids tend toward the formation of acid stools, diets rich in bases tend toward the production of soap or alkaline stools. Thus breast milk and cow's milk contain approximately the same amount of fat, but the ratio of fat to base would give acid stools with the former and alkaline stools with the latter. The amount of food which the new-born infant obtains, is inadequate to

meet its nutritional needs and partial starvation results. Ypplo observed that in starvation, whether the previous feeding had been by breast milk with stools averaging pH 4.7, or by cow's milk modifications with stools averaging pH 7.0 to 8.0, a stool averaging pH 6.4 results. The acidity reaches a constant and characteristic pH, almost identical with that found in new-born infants. The meconium is closely analogous both in chemical composition and pH to the stools found in starvation. Therefore it seems probable that the initial pH of meconium and its gradual orderly change to that of the breast fed infant's stool, are due primarily to the state of partial starvation during the first few days of life.

### Lead Poisoning.

C. F. MCKHANN (*American Journal of Diseases of Children*, September, 1926) discusses the treatment of lead poisoning in children. The disease is secondary to a perverted appetite. In this condition infants and children may ingest sand, coal, cloth, hair and paint; the latter may be chewed from toys, cribs and woodwork. The essential clinical picture in lead poisoning is an anæmia associated with gastrointestinal disturbances, such as loss of appetite, constipation, abdominal pain and vomiting. The anæmia is characterized by reduction in the red cell count with the appearance of basophilic stippling of the cells. The lead line in the gum margin is only occasionally present in children. In severe cases, neuritis and encephalitis occur. Lead amblyopia has been reported with lead encephalitis in children. The treatment used by the author in his cases is that recommended by Aub. The mechanism of absorption, transportation, storage and excretion of the metal is of the utmost importance. The mechanism of transportation is similar to that of calcium and circumstances favouring calcium deposition favour lead storage and conditions favouring calcium removal likewise affect lead. Symptoms of lead poisoning occur when lead is circulating in the blood stream or when it is bound especially in the liver or brain. It is stored in the bones in an inert form, where it may remain indefinitely without causing symptoms. Under certain conditions large amounts of the metal are released into the circulation and then acute symptoms occur. This has been known to happen years after removal from exposure to lead. In the absence of severe symptoms, especially those of encephalitis, deleading or the withdrawal of lead from the bones and the hastening of its excretion may be attempted. This is accomplished by making the lead salts more soluble by the production of an acidosis, together with the maintenance of a diet low in calcium. Aub has found ammonium chloride acidosis to produce the greatest increase in lead excretion. In the presence of severe symptoms this procedure becomes dangerous owing to the possibility of aggravating the condition by adding to the circulating

poison. Therefore in those severely ill the process is reversed and an attempt made to increase storage of the lead in the bones. Calcium salts in large doses, together with a diet rich in calcium are administered. Acidosis is carefully avoided. In the severely ill when persistent vomiting or convulsions are present, intravenous therapy is required. For this purpose, from fifty to a hundred cubic centimetres of a 2% solution of calcium chloride are given daily until convulsions and other dangerous manifestations have ceased. A rapid subsidence of symptoms is due to the removal of lead from the circulation. This, however, does not mean that the patient is out of danger because the metal is stored in the bones and under certain circumstances may be released and enter the circulation again and cause a recurrence of acute symptoms. This is likely to occur during acute infections. Therefore as soon as the condition of the child permits, deleading should be instituted. In the low calcium diet necessary, milk, eggs, green vegetables and many fruits must be omitted. Thus in very young children deleading is not always feasible, because of the inability to supply a diet low in calcium. In these cases the high calcium diet should be continued so as to maintain storage in the bones and a careful watch must be kept for the development of acidosis and the resulting acute symptoms of lead poisoning.

### Acute Nephritis.

K. D. BLACKFAN (*Bulletin of the Johns Hopkins Hospital*, August, 1926) discusses acute nephritis in children with special reference to the treatment of uræmia. It is possible in children to differentiate with a considerable degree of accuracy the acute glomerular from the acute tubular variety of nephritis. The latter type tends to run a subacute or chronic course. Nevertheless recovery is frequently seen even after the symptoms have persisted over many months. Secondary infection is usually the cause of death in tubular nephritis. The severity of acute glomerular nephritis is gauged by the degree of œdema, the amount and persistence of hæmaturia and by oliguria and anuria. The author believes that in children with this form of nephritis a steadily rising blood pressure and the development of cerebral symptoms are the most important danger signals. The observations made in his series of cases show that as long as the systolic blood pressure remains about 110 to 130 millimetres of mercury, little apprehension need be felt concerning œdema, hæmaturia or even a scanty output of urine. On the other hand with a steadily rising blood pressure and with headache, vomiting and visual disturbances appropriate treatment must be instituted. Blackfan has studied eleven children with acute glomerular nephritis who suffered from uræmia or as he prefers to say, "cerebral symptoms." His observations show clearly the relationship which exists between the cerebral manifestations,



the blood pressure and the oedema in this form of uræmia. As the blood pressure rose, the patients vomited, became irritable and complained of headache. Oedema and continued rise in blood pressure, visual disturbances, coma and convulsions followed almost invariably. Decrease of oedema and lowering of the blood pressure were coincident with the disappearance of cerebral symptoms. In one case a huge oedematous brain was found incarcerated in the cranial vault at necropsy. The author concludes that oedema of the brain is the initial cause of the cerebral symptoms and arterial hypertension in acute glomerular nephritis in children. The treatment of this condition by intravenous injections of a 1% solution of magnesium sulphate has given most favourable results. The solution is injected slowly at the rate of two cubic centimetres per minute. This affects a prompt fall in blood pressure with rapid relief of the cerebral symptoms. The course of the disease as evidenced by the renal symptoms is not altered. Frequently diaphoresis and diuresis follow. The duration of the effect is from five to twelve hours so that a rise in blood pressure with return of alarming symptoms may be expected unless active measures directed against the generalized oedema are instituted. This is best accomplished by the administration of magnesium sulphate by mouth and by rectum. It is the author's custom to give thirty to forty-five cubic centimetres (one to one and a half ounces) of a 50% solution by mouth every four or six hours and sixty to ninety cubic centimetres (two to three ounces) of the same solution by the rectum every six hours. Excessive dehydration should be avoided.

## ORTHOPÆDIC SURGERY.

### Hypoglossal-facial Anastomosis for Facial Paralysis.

ALFRED BROWN (*Surgery, Gynecology and Obstetrics*, May, 1926) records the results of hypoglossal-facial anastomosis or facial paralysis in two cases. He says that it is fair to assume that this operation not only restores facial symmetry and voluntary movement to facial muscles, but also brings about the return of a certain amount of emotional expression. A report of two cases is given and the article is illustrated with drawings and photographs.

### Median Nerve Lesions.

DENIS CRILE (*Surgery, Gynecology and Obstetrics*, March, 1926) describes a phenomenon for determining the presence of median nerve lesions. This consists in applying passive hyperæmia and noting the changes that occur in the fingers supplied by the median nerve. After two or three minutes the thumb and first two fingers and the radial side of the ring finger gradually become cyanosed and tense, the remaining area of the palm assumes a mottled red. This phenomenon was

found to be constant, appearing with certainty within five minutes after the hyperæmia was established. The colour changes gradually disappear with the recovery of the nerve lesion. The value of the sign seems to be its objective qualities and is of use in detecting the malingerer.

### Pott's Disease.

A. ROLLIER (*Journal of Bone and Joint Surgery*, April, 1926) treats all patients suffering from spondylitis with heliotherapy and immobilization in the horizontal position. He regards immobilization in the horizontal position as indispensable and therefore refuses to consider any kind of ambulatory treatment. To obtain the desirable hyperextension of the diseased segment, he immobilizes the patient alternately in the dorsal and ventral positions. If the deformity is in the thoracic region, the patient is immediately placed on a hard mattress without the addition of cushions. If there is extreme emaciation, cushions filled with millet seed are used. For children and restless adult patients a canvas waistcoat to prevent the patient sitting or turning in bed is also used. Should it be necessary to fix the lower limbs, this is done by double loops over the knees and ankles. In spondylitis complicated by the formation of a gibbus an attempt to reduce the deformity is made by slowly increasing the pressure on it by means of the body weight alone. To accomplish this, a millet seed cushion is introduced under the kyphosis and is replaced later by a sand cushion, the thickness of which is gradually increased. Care is taken that no lateral pressure is put on the kyphosis. As soon as the deformity is reduced the cushion is replaced by a wooden plank, two to three centimetres thick with a slightly convex surface. Patients quickly grow accustomed to the hard surface and prefer it to cushions. When the pain has disappeared, usually after some weeks of heliotherapy, patients are turned to the ventral position. There need be no fear whatever of spinal fracture in the ventral position. The patient left in the ventral position has a natural tendency to lift the head and to use his hands more easily. This, too, gradually brings his spine back into position and leads to a development of the back musculature. For cervical spondylitis a celluloid cup modelled on a plaster cast of the back of the head is fitted with wheel supports and runs freely on rails. This eliminates friction and enables extension to be obtained, the head being retained in position by its own weight. Patients with closed spondylitis may expect without exception certain cure by the author's treatment, but the prognosis in cases of mixed infection is less favourable. The author is strongly against all surgical interference. Heliotherapy combined with immobilization in the horizontal position is to be continued until a skiagram establishes the cure of the disease. If the disease involves more than one vertebra, recovery takes usually from one to two

years from the beginning of the cure. When the X ray results confirm the clinical findings, a supporting corset is applied. For this purpose corsets of celluloid or linen reinforced with steel rods are used. Grown men should wear the celluloid corset for six months and it is then replaced by a lighter one without reinforcements which is then worn for six months. All the corsets are prepared from plaster casts. If the cure is complete, the patient is advised to continue his sun baths as far as possible at home.

### Tuberculosis of the Hip Joint.

RUSSELL A. HIBBS (*Journal of Bone and Joint Surgery*, July, 1926) reports twenty cases of hip joint tuberculosis treated by fusing the joint. Of the twenty joints eighteen are definitely fused, this is determined by stereoscopic X ray pictures and by the disappearance of symptoms. The age of the patients varied from two and a half to thirty-one years. The author's operation is an extraarticular fusion and has been previously described. It is illustrated in the article. The case histories of the twenty patients are given. The twenty patients had been treated in hospital for an average of about six years. The majority of them had worn apparatus for years. The group presented is typical of cases of hip joint tuberculosis and illustrates the hopelessness of dealing with this by the old conservative methods.

### The Tensor Fasciæ Femoris.

A. MACKENZIE FORBES (*Journal of Bone and Joint Surgery*, July, 1926) draws attention to the diversity of opinion regarding the function of the tensor fasciæ femoris. Some authorities state that it flexes the knee joint, others that it is an extensor. Silver and Yount suggest that tenotomy of the ilio-tibial band is a successful treatment of both hip and knee flexion. They tenotomize the ilio-tibial band near the knee in preference to carrying out Soutter's procedure. The result of Silver and Yount's operation has induced the author to make use of the tensor fasciæ in tendon transplantation for the purpose of extending the knee. He transplants the muscle into the patellar ligament and the patella and he has been very pleased with the results.

### Ischæmic Contracture.

PAUL N. JEPSON (*Annals of Surgery*, December, 1926) outlines the experimental study of ischæmic contracture. The lesion of ischæmic paralysis, as seen in man, was reproduced in animals by bandaging one extremity and by preventing the return of the venous blood. The contracture was very slight, if drainage was instituted within a few hours of the production of the lesion. The results of the experiments indicate that contracture was due to a combination of factors, the most important of which are impairment of the venous flow, extravasation of blood and serum and swelling of the tissues with a consequent pressure on the blood vessels and nerves.

## British Medical Association News.

### SCIENTIFIC.

A MEETING OF THE QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Old Town Hall, Vulture Street, South Brisbane, on November 5, 1926, Dr. E. SANDFORD JACKSON, the President, in the chair.

#### Public Health in Greater Brisbane.

DR. H. W. TILLING read a paper entitled: "Public Health in Greater Brisbane" (see page 105).

#### Mosquito Control.

DR. R. HAMLYN HARRIS read a paper entitled: "The Biological Side of Mosquito Control" (see page 108). Dr. Harris also gave an interesting demonstration of biological specimens in the Entomological Laboratory of the Health Department of the Greater Brisbane Council.

DR. A. STEWART thanked Dr. Tilling and Dr. Hamlyn Harris for their interesting papers. He was especially interested in the latter's paper and was very sympathetic with the difficulties of the entomologist in regard to mosquito control. He himself had taken much interest in the question and the idea of the influence of the hydrogen ion concentration and Dr. Buxton's experiments were quite new to him. Speaking from what he had seen elsewhere, he did not think it was possible to get rid of the stegomyia variety without abolishing tanks.

DR. G. GIFFORD CROLL, C.B.E., thanked Dr. Tilling and Dr. Harris very much and congratulated them both on their introduction of their work and methods to the general medical body. He considered there had not been in the past enough cooperation and regarded the confidence and cooperation of all practitioners as very necessary for success. He hoped criticism would not be a deterrent to further interesting papers from Dr. Tilling and Dr. Harris. Regarding the new diphtheria regulations, he was anxious to know just how Dr. Tilling supervised and controlled contacts and carriers. He (Dr. Croll) did not approve of keeping carriers in the Children's Hospital. He then mentioned several different classes of carriers and distinguished between carriers in general and contacts with actual patients. While anxious to find and control such carriers, he did not think they should be confined in hospital with patients suffering from acute infection and was opposed to giving them serum. He thought that asymptomatic carriers should be treated separately and then discussed the various modes of treatment of carriers. In his opinion apparently the only successful method was the administration of vaccines and he suggested that some place should be set aside specially for their treatment. With regard to the new regulations relative to summer (infantile) diarrhoea he agreed with the giving of antidyenteric serum, but not with the amount recommended by the Medical Officer of Health. He thought that amount might be dangerous. He heartily endorsed the recommendation to examine stools bacteriologically, but thought the matter presented definite practical difficulties.

DR. J. V. DUNIG was chiefly exercised by the increased incidence of diphtheria. He did not think it was due to an epidemic in the ordinary sense, but rather that the increased number of cases was probably the result of better notification, following the improved methods and better organization of the new Health Department. He regarded diphtheria as essentially an institutional disease and thought that its treatment should be prosecuted much further. In his opinion school children were 100% susceptible. As things actually were, he favoured immunization of the community and in this regard he considered the Schick test the controlling factor and the administration of antitoxin quite farcical. As to carriers which he considered were becoming a big economic burden on hospitals and communities, he had found that bacilli from long-standing carriers were virulent and he thought that the problem would be no nearer solution until something, such as he had suggested, was done. He then stated that he was partly responsible for making infantile diarrhoea notifiable. He thought it a very serious condition

and was seeking to isolate if possible the causative bacilli which appeared to him to be multiple. Making the disease notifiable would obviously help him in his search and he also stressed the value and importance of rapid bacteriological examination of the stools.

With regard to the recommended dosage of antidyenteric serum in infantile diarrhoea he wished to make an explanation. He said he had been more or less personally responsible for suggesting that particular dose of serum which he since regarded as being too big. He was anxious to admit his error in this regard. He himself still questioned the value and worth of this serum and he regarded the whole question of antidyenteric serum as quite an open one and still undecided. He then congratulated Dr. Tilling and Dr. Harris on their very efficient organization of which he thought the press was too adversely critical.

DR. P. DE LUCA joined in thanking the speakers and also made a few remarks with regard to the question of the dosage of serum in infantile diarrhoea.

DR. S. F. McDONALD also wished to add his thanks and congratulations to the readers of the two interesting papers and hoped they would continue the good work they had begun so well. He thought that the new health ordinances omitted a very important thing and this was in regard to the all-important question of pulmonary tuberculosis. From what the Health Officer had told them there were actually more deaths registered from pulmonary tuberculosis than the number of cases notified as such. The reason of this, he considered, was obvious. He said that medical men were too human and considerate to make a pariah of the tuberculous patient and in many cases simply did not notify the case as such on account of the distressing results to the patient concerned. He deplored very much the absence of some place whither to send patients branded as phthisical. He thought that the ordinances in regard to hospitals were not comprehensive enough and on the maternity side he quoted Dr. Marshall Allan's opinion—a very disparaging one—of the so-called "private obstetric hospital." He thought Dr. Hamlyn Harris's lecture extremely instructive.

DR. ALEXANDER MARKS, C.B.E., D.S.O., added his thanks and congratulations to the two speakers and on the question of notification of pulmonary tuberculosis quoted two very illustrative cases, both of which demonstrated an unnecessary waste of both time and money. The second case was one of a patient suffering from pleurisy who had later been examined by X rays and notified as suffering from suspected pulmonary tuberculosis. Ultimately he had been discharged as non-tuberculous. The point he wished to make was that medical practitioners should wait until they were certain and should not notify suspected cases.

DR. F. J. MEADE supported the remarks of previous speakers and was rather inclined to criticize Dr. Tilling's paper. *A propos* of the actual transmission of specimens to the Joint Laboratory he stated that there were definite, practical difficulties and wondered whether some arrangement could be made for the transport of specimens, swabs *et cetera* to some central depot, say in the heart of the city. He also mentioned the difficulties of treating diphtheria in private practice. He finally supported Dr. McDonald in regard to the conduct of the well known "private hospital" where maternity patients were admitted and looked after cheek by jowl with patients suffering from general surgical conditions.

DR. P. J. KERWIN added his word of praise to Dr. Tilling and Dr. Harris. He regarded it as very gratifying from the ratepayer's view point that such good work was being instituted and that the present organization showed such promise. He disagreed with the compulsory notification of puerperal patients with a temperature of 37.7° C. (100° F.) and thought some modification of this ordinance necessary.

DR. E. S. MEYERS also thanked the readers of the papers and said that he had opposed the rather drastic provision with regard to puerperal sepsis. In regard to the present health organization he thought there should be more coordination between all the general hospitals and also between hospitals and practitioners.

DR. H. W. TILLING, speaking in reply, regretted that there had not been even more criticism. Concerning the supervision of carriers he explained that a record was kept

at the department of every patient until he was declared absolutely normal. Also, he pointed out that carriers had choice of private or hospital treatment, after which the matter passed out of official departmental control, except for their insistence on an ultimate clearance in each case. He agreed that carriers should not be detained if proved atypical. With regard to the transport of culture tubes *et cetera* he admitted there were practical difficulties and thought it was hard to know just what to do. He would be pleased to consider any scheme proposed in this regard. As for the omitted pulmonary tuberculosis regulations (mentioned by Dr. McDonald), he stated that these had been purposely left out of the ordinances, as he was under the impression that the State Health Department still did most of this work. In answer to Dr. Marks he agreed that suspect cases of pulmonary tuberculosis generally gave much trouble.

DR. HAMLYN HARRIS in reply said that he was very grateful for the opportunity of addressing members of the Branch. He was sensible of the appreciation they had shown, both of his paper and of the demonstration in the laboratory. He concluded by paying a tribute to Dr. Tilling's helpful and sympathetic support in his (Dr. Harris's) present position of entomologist to the new department.

DR. JACKSON, the President, then made a few remarks in conclusion. Referring to Dr. Tilling's explanation of the rather remarkable absence of malaria in Brisbane, he wished to say that a perusal of some of the old hospital records showed some very interesting facts in this regard. He mentioned one year, when the population was only one thousand, during which malaria had been very prevalent. Those were the old convict days, he said, and there had seemed to be much more malaria then than later on. After the removal of the convicts, the incidence of malaria had fallen considerably. In 1840, however, there had been a recrudescence. With the advent of enteric fever to those parts malaria seemed to have more or less disappeared. In his opinion, the convicts seemed to have been carriers of malaria and the recrudescence in 1840 was due, he thought, to the encouragement to the district of aboriginals, for alleged economic-industrial reasons. He concluded by adding his quota of thanks and congratulation to the two speakers and on his motion a hearty vote of thanks was accorded Drs. Tilling and Harris for their interesting and instructive papers.

A MEETING OF THE SOUTH AUSTRALIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION and of the DENTAL SOCIETY OF SOUTH AUSTRALIA was held at the Lister Hall, Hindmarsh Square, Adelaide, on November 25, 1926, DR. H. H. E. RUSSELL, the President, in the chair.

#### The Extraction of Teeth.

MR. LEONARD TROTT, D.D.S., read a paper entitled: "Factors Influencing Extraction of the Teeth" (see page 109).

DR. LEONARD C. E. LINDON read a paper entitled: "Dental Extractions in Relation to Surgery" (see page 111).

MR. A. P. R. MOORE, B.D.S., read a paper entitled: "Factors Influencing Extraction of Teeth" (see page 113).

DR. GUY LENDON read a paper on dental extractions in relation to medicine. In the course of his remarks he said that a focus of infection in connexion with the teeth differed from most other foci in that there was in addition to the possibility of the infective organism becoming generalized the probability that the organism would pass down the esophagus into the stomach. In discussing the normal result of the ingestion of bacteria Dr. Lendon said that streptococci were grown to the exclusion of all others in cultures from the healthy mouth and that these in addition to organisms adventitiously introduced must be constantly entering the stomach. There were two protective mechanisms, hydrochloric acid and bile. Hydrochloric acid destroyed all organisms entering the stomach and the duodenum. The contents were sterile a few hours after a meal. The bile dealt with some brands of streptococci, but not with others. It also dealt with pneumococci, but not with the colon bacillus. It was thus evident that the normal organism was well protected against infection from the mouth and *via* the intestinal route.

Dr. Lendon then turned to the diseases in which this protective mechanism, hydrochloric acid, was unavailable. The most striking were pernicious anæmia and cancer of the stomach. In the latter the depressed acidity was the result and not the cause of the disease and the patient seldom lived long enough to see whether his lack of acidity would predispose to any infection. In pernicious anæmia on the other hand they had the best opportunity to seek the results of diminished acidity, for it was known that diminished acidity preceded the symptoms of the disease by many years. In pernicious anæmia the red blood corpuscles were destroyed and each corpuscle contained more hæmoglobin than usual. It had been suggested that this hæmolysis arose from streptococci absorbed from the alimentary canal and allowed to pass the stomach. The oral origin was supported by several facts, namely, that pyorrhæa was practically constant, apical disease was common and glossitis was a diagnostic sign. William Hunter had drawn attention to this. Most authorities, however, thought that there must be some additional factor.

In chronic gastritis the hydrochloric acid was nearly always diminished and the teeth were nearly always diseased. Many persons had ascribed the gastritis to the condition of the teeth and certainly most patients improved with dental attention, but there were many factors involved.

There were many conditions associated in all probability with the products of dental sepsis, but none of them were regular or definite. They were: fibrositis and muscular rheumatism, osteoarthritis, diseases of the eye, especially iritis and vitreous opacities, intermittent fever. Cases of long continued fever had been observed in which no other cause than dental sepsis had been observed and in which the fever ceased when the offending teeth were extracted.

Dr. Lendon referred to the history of a girl, aged fifteen years, who had been treated at the Adelaide Hospital. The patient had suffered from pyrexia for eight months. During this time the teeth had been attended to and finally middle ear disease had been discovered as the cause and the temperature fell. He referred also to cases of malignant endocarditis in which streptococci had been discovered in the saliva and the condition had been thought to be of dental origin. In conclusion Dr. Lendon raised the question as to whether dental extraction should be complete in pernicious anæmia or whether it should be partial and controlled by the results of radiological examination. He emphasized the relative frequency of dental sepsis and the relative infrequency of serious results.

SIR JOSEPH VERCO, speaking as Dean of the Dental Faculty, expressed his pleasure that the Branch and the State Dental Society had held another combined meeting. He congratulated the readers of the papers from the dental and medical professions on their deliverances on the subject of extractions. It was satisfactory to notice the absence on both sides of what might be styled the dogmatic assertion of the universal positive or negative.

As some of Dr. Trott's skiagrams demonstrated, crowns and bridges could be serviceable and not necessarily disease breeding; they might obviate extractions and were not altogether American fancies to be taught only to be understood and rejected. All pulpless teeth were not necessarily foci of infection; infected teeth might constitute such foci, but could be rendered non-infective and then be retained as useful and free from danger.

Though an infected tooth or an apical abscess might occasion recurrent or persistent general pyrexia, it might not even when found to be present, be its actual cause; this might be discovered in an accompanying disease of the ear, which, if associated might, as in Dr. Lendon's case, be cured with a satisfactory consequent disappearance of the pyrexia.

He did not think the complete artificial denture in comparatively young people, consequent upon early decay of their deciduous and permanent teeth, was in itself the cause of their continued indigestion, but that the same habit of imperfect mastication and improper diet which had occasioned the loss of their natural teeth, was still continued with the artificial denture. This might easily be proven by watching these young people bolting their food at their meals and observing what they ate and drank.



Perfect mastication was quite possible with a complete artificial denture even if this would not exert a biting force of "two hundred and fifty pounds to the square inch." The denture would permit of as many grinding movements as might be necessary for complete attrition.

MR. ARTHUR CHAPMAN, D.D.S., said that he wished firstly to support Dr. Trott's contention that it was an unwise procedure to extract malposed teeth, except in rare cases. Persons in adult life were constantly seen who had narrow, constricted, V-shaped arches and high vaulted palates, such persons being not in good health, suffering from some more or less vague digestive disturbance of a chronic nature. Although all the teeth present were contiguous and the uppers occluded with the lowers fairly well, there was most frequently a history of extraction of from two to six teeth at about puberty in order to eliminate the crowding. A pair of V-shaped arches, no matter how well the teeth appeared to occlude, could never effectively accomplish a lateral swing in mastication so essential to efficient trituration of food. By extraction in these cases crowding was avoided, but constriction was assured. They could not afford to neglect Angle's dictum: "All the forces of development are misdirected and the condition only gets worse as time goes on."

With regard to postoperative hæmorrhage in connexion with extraction of teeth, while agreeing with Dr. Trott that pressure effectively applied was wonderfully efficient, he pointed out that pressure either dammed the flow of blood or else kept the parts at rest. But he was of the opinion that apart from cases in which the coagulability of the blood was low, the greatest cause of postoperative hæmorrhage must be laid down to faulty surgical technique. It was not enough to remove the tooth intact from its socket and he was quite certain that there would be fewer causes of persistent bleeding if operators would carefully finish the operation by removing detached pieces of bone, torn gum tissue *et cetera*. The constant movement of loose fragments of roots, bone and pendulous gum tissue was a fruitful cause of continued hæmorrhage. It would be found in very many cases that a complete clean up, curetting followed by but a few minutes' continued pressure, would result in the easy formation of a satisfactory clot.

With regard to Dr. Lendon's question as to the effect of artificial teeth in young persons upon the gastric secretions, he was not aware of any satisfactory solution ever having been promulgated. However, he recollected reading of a series of cases of achylia occurring in young persons who had few teeth and no effective masticatory power. The writer had further stated that no improvement was obtainable until the absence of masticatory power in the individual was remedied.

But speaking quite theoretically, since the masticatory force registrable between the human molars was in the region of two hundred pounds and that obtainable between full sets of artificial teeth was only about thirty-five pounds, it was quite possible that the substitution of the natural by artificial teeth had a very definite effect on the health of young persons albeit some years might elapse before the cumulative effect was detectable, objectively or subjectively. It was known that wild animals if deprived of a few essential teeth very quickly died from under nourishment. While the normal masticatory musculature might have a good deal in reserve which was seldom called upon with the use of the prepared foods of civilized peoples, it was obvious that it could never be called upon by the individual wearing artificial dentures and the nutrition to the muscles, bones and surrounding parts including the parotid must necessarily be greatly modified.

With regard to Dr. Lendon's second question as to the effect of extraction of all the milk teeth on development, it was fully believed by dentists that development of the jaws and certain adjacent bones was profoundly influenced by function and the loss of the milk teeth always resulted in more or less retardation of growth in these parts. In the realm of experimental science it had been shown that the removal of all the tooth buds in a dog on one side of the maxilla only, resulted not only in non-development of the jaw bones on that side of the head, but of adjacent bones as well.

MR. P. RAYMOND BEGG, B.D.S., said that Dr. Trott had ably pointed out the importance of normal occlusion. As he had been asked to speak, he found it impossible not to repeat some things which Dr. Trott had already mentioned. Nature provided every individual, except in very rare instances, with the full complement of teeth which were so formed that they occluded perfectly. There were many causes which prevented the teeth taking their normal positions in the arches and locking normally with their antagonists. Before mentioning any of these causes he wished to remind those present that as soon as the enamel crowns of the teeth were formed, the enamel organ, the formative organ, disappeared. Thus, the teeth once formed had no power to alter in shape. This necessitated that all the other tissues of the dental apparatus being plastic, must mould themselves to the particular tooth forms of the individual for the whole dental apparatus to be in harmony from a mechanical, physiological and æsthetic point of view. These other tissues included besides the maxillæ, mandible and hyoid bone, the peridental membranes, the muscles of the lips, cheeks, tongue, mouth, also the nasal passages, palate and throat.

Normal functioning brought about the harmonious development of the whole dental apparatus according to Nature's plan.

The whole principle of orthodontia (the correction of malocclusion) was based on normal occlusion. It was impossible to improve on Nature by extracting teeth which Nature meant to be present, because the absence would be reflected in the other tissues of the dental apparatus.

If the tooth of one arch was rotated on eruption, the pressure of the approximating teeth increased the rotation and the arch was diminished in size to the extent of the rotation. This abnormal condition would be reciprocated to the opposing arch and the malocclusion would be progressive as were all cases of irregularities of the teeth.

Premature loss of milk teeth was a very important cause of malocclusion. This early loss was due mostly to decay which on presentation to the dentist usually necessitated extraction.

The space occupied by the lost member was encroached upon by the approximating teeth so that no space was left for the permanent tooth to come into position.

Both jaws were diminished in size to this extent.

This simple beginning nearly always involved the whole dental apparatus producing a severe form of malocclusion.

To the casual observer it appeared in these cases that there were too many teeth for the jaws, it formerly being supposed that the unfortunate child had inherited large teeth from one parent and small jaws from the other. It certainly was a blessing that such a child should have but two parents.

In treatment of these cases it was always advocated that some of these large teeth be removed to relieve the crowded condition of the arches, but at present they knew that on all the teeth being brought into correct positions, all the other plastic tissues of the dental apparatus remodelled themselves according to Nature's original plan.

The lips and cheeks external to the dental arches when normally functioning kept the teeth in position as did hoops upon the staves of a cask. This external muscular force was balanced by the musculature of the tongue internally.

Abnormal habits such as biting the lower lip, sucking the thumb or fingers *et cetera* would, if persisted in, cause invariably the protrusion of the upper jaw and retrusion of the lower.

Dr. Angle had said that the worst case of malocclusion he had seen was caused by sucking the lower lip. Overcoming of these habits together with regulation was necessary for successful treatment.

Of all the various causes of malocclusion, mouth breathing was most potent and constant. The typical mouth-breather was known to all. The mouth was always held open and the lower jaw hung down. This was the position of rest in such cases, consequently the mandible was posterior to the position it would occupy in a closed, normal mouth. The first lower permanent molars in erupting locked posteriorly to their normal locking positions, an easy matter in childhood owing to the shallowness of the

glenoid cavity and mobility of the mandible and the worn state of the cusps of the deciduous teeth.

Every succeeding lower tooth to erupt locked posterior to its normal position and the jaw then was effectively held in posterior occlusion. The upper arch was narrowed, as the tongue, being held in the floor of the mouth to permit breathing, failed to exert its normal influence in widening the arch and palate. This consequent lack of development of the palate had a pronounced influence on the nasal cavity and added to the obstruction already present. The upper incisors having no antagonists, were lengthened and protruded and were effectively kept so by the lower lip which rested between them and the lower incisors. The upper lip was short and functionless and had no restraining influence on the protruded upper incisors. The lower incisors having no antagonists, erupted more than normally and in many cases caused indentations in the hard palate.

Lateral movement of the mandible, required in normal mastication, was restricted as in attempting such the lengthened lower incisors would strike against the lingual surfaces of the upper teeth. Malnutrition through impaired mastication and lack of sufficient oxygenation of the blood was typical of these cases.

In mouth-breathers, the air was not filtered and warmed by passage through the nasal cavities but passed to the lungs in such a state that all the oxygen could not be absorbed, also it was laden with microorganisms *et cetera*. The lack of the stimulus of passage of air through the nose accounted largely for the undevelopment of that organ.

The traumatic occlusion occasioned by the incorrect locking of the teeth in this type was a potent factor in the causation of pyorrhoea, as in fact it was in all cases of malocclusion.

In the treatment of these patients the rhinologist should first remove the pathological tissue from the nose or carry out any other treatment indicated. Then the expansion of the dental arches, during the moving of the teeth into correct alignment by its influence in altering the shape of the palate permitted of the development of the constricted cavities of the nose and thus permitted nasal breathing.

In treatment the lower jaw was brought forwards and the upper backwards and then the lips resumed their normal function when encouraged by muscular exercises.

In fact this type readily responded to treatment. The overcoming of the habit of mouth breathing was assisted by the wearing of adhesive plaster over the mouth at night time.

The force of mastication and that of the then normally directed muscular forces, when once the teeth were brought into their correct positions and thus into correct cusp relationship, stimulated the maldeveloped bones, in fact all the tissues of the dental apparatus, to develop according to Nature's original plan for that individual.

Some other causes of malocclusion were hypertrophied tonsils and other throat conditions causing protrusion of the lower jaw. Also external pressure, as might be brought about by leaning the face on the hand or sleeping with the hand under the face, was productive of many cases of malocclusion. All these could be successfully treated after removal of the cause.

It seemed hardly necessary to enumerate the results of malocclusion, except to mention that the most potent cause of pyorrhoea was incorrect locking of the teeth, traumatic occlusion, also to say that the impairment of mastication caused by malocclusion had an enormous influence on the nutrition of the whole body.

A MEETING OF THE SECTION OF OBSTETRICS AND GYNÆCOLOGY OF THE NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the B.M.A. Building, 30-34, Elizabeth Street, Sydney, on June 16, 1926, Dr. R. Worrall, the Chairman, in the chair.

#### Bad Results of Gynæcological Operations.

Dr. R. I. Furber, D.S.O., read a paper entitled: "Some Bad Results of Gynæcological Operations" (see page 115).

#### Puerperal Infection.

Dr. H. A. Ridler read a paper entitled: "Puerperal Infection" (see page 118).

Dr. Cecil Coghlan, after thanking Dr. Furber for his interesting paper, pointed out that he had often noted that patients complained of frequency of micturition after the Gilliam type of operation. Some had been so distressed by it that they were unable to take their part in social life. He deprecated the indiscriminate operations for retroversion of the uterus which was often only the obvious part of a more extensive trouble or an innocuous congenital condition. Before any patient was subjected to an operation for retroversion, the surgeon should see whether her symptoms were relieved by replacement and retention with a pessary. The type of operation that he considered best for acquired displacement, was wholly by the vaginal route with efficient separation of the bladder, shortening or reinforcing the utero-pubic ligaments, shortening the utero-sacral ligaments and efficient plastic repair. This type of operation was extensively done on the Continent and in Dublin and was becoming more popular in England. Ventrofixation was a operation that was practically dead abroad.

Dr. Coghlan discussed ovarian dysmenorrhoea and said that when associated with the late Dr. Ritchie at Armidale he had seen decortication of the ovary carried out in a number of instances. The symptoms had certainly been relieved, but he had never seen pregnancy supervene. He entirely disagreed with the routine removal of the cervix in hysterectomy and with the statement made by one of the speakers that the cervix had no function. When the cervix was entirely removed, the result was a conical vagina and a dry vagina owing to lack of cervical secretion. This latter condition also occurred after coning of the cervical canal and interfered with normal married life. The routine removal of the cervix on account of the small risk of carcinoma he compared to the routine removal of the female breast at the menopause on account of the risk of carcinoma developing therein. Certainly at the operation the cervix should be repaired.

Dr. Ridler's paper had brought out some interesting points. One was the beneficial result to be obtained by sitting the patient up early to promote efficient drainage. No other posture could do this. He had taken part in the Rotunda investigation of the cause of puerperal sepsis which was presented at the Congress of Gynæcology and Obstetrics in 1925. From the investigation it could be concluded that streptococci were normal inhabitants of the genital tract. If it was necessary to investigate the interior of the uterus, the finger or the finger wrapped in gauze was the best and after that the flushing curette.

Professor J. C. Windeyer thanked both Dr. Furber and Dr. Ridler for their brief, but interesting papers. In regard to Dr. Furber's statement concerning operations by inexperienced surgeons he pointed out that this state of affairs was not a local one, but was world-wide. He hoped that the proposed College of Surgeons of Australasia would have some effect in diminishing the number of operations performed by inexperienced men. He was a firm believer in the Alexander operation in suitable cases, namely, when it was possible to antevert the uterus bimanually and to move the fundus freely from side to side and when there was no evidence of pelvic adhesions. He considered that all first attacks of salpingitis should be treated medically, unless large pus tubes were present.

He agreed with Dr. Ridler that the finger was unquestionably the instrument to use inside the uterus when placental fragments needed removal. He thought that Dr. Ridler was rather too optimistic in regard to the effect of local treatment in the early stages of uterine infection.

Dr. Crawford Robertson congratulated Dr. Furber on the excellence of his paper. As the majority of points had been touched on by other speakers, he would content himself by thanking Dr. Furber for again bringing forward the question of the abuse of the curette, more especially in regard to chronic endocervical discharges. It was a great pity that it was used so much in these cases, as it did not do the least good. It was necessary to remove the mucous lining either by the operation as

practised by Worrall or by the method of Schlink. Again in chronic salpingitis with a profuse discharge no thanks came from a patient, if after a salpingectomy she still had a profuse discharge. Dr. Crawford Robertson regretted that Dr. Furber had not brought up the question of myomectomy in the treatment of fibroids of the uterus, especially during the child-bearing age. There was still a great tendency to do a supravaginal hysterectomy in these conditions whereas myomectomy was the operation indicated.

DR. H. C. E. DONOVAN, after thanking the readers of the papers, said that the question of ventrosuspension had been raised and he would like to say a word in its defence. The Alexander operation was useful, but its application was limited to cases in which intraabdominal complications could be excluded with certainty and was not suitable if the uterus was heavy. Much of the criticism of ventrosuspension was owing to incomplete knowledge of how it was performed and its confusion with the original operation of Howard Kelly. In Kelly's operation the uterus was suspended or fixed from the fundus or even the posterior surface. In the operation performed at The Women's Hospital it was suspended from a point a little above the internal os. As the portion of the uterus below the point of suspension grew very little during pregnancy, sacculation never occurred. They had traced many patients through subsequent pregnancies and had never seen or heard of a case of dystocia from this cause.

Dr. Donovan was glad that Dr. Ridler had emphasized the importance of early digital exploration in cases of pyrexia. The curette should never be used until the placental site had been located and then solely for the purpose of removing fragments located by the finger. This was the intelligent use of the curette. He drew attention also to acute antelexion and acute retroflexion as causes of retention of lochia and pyrexia.

He had recently been using "Novarsenobenzol" in puerperal sepsis and although the cases were few, the results were encouraging. At the very least it improved the acute anaemia from which so many of the patients suffered.

Dr. Furber in reply said that Dr. Coghlan had apparently referred to panhysterectomy in his remarks; coming out hysterectomy, as Dr. Worrall had so ably demonstrated some years previously, left the shell of cervix as the central pillar of attachment and it remained jutting into the vault of the vagina which retained its shape and did not become conical. It was hardly a fair comparison to make between removal of the endocervix during a hysterectomy and routine removal of the breasts at the menopause, the mutilation and the added risk in the former being nil.

## The College of Surgeons of Australasia.

A MEETING was held of surgeons from New South Wales, Victoria, South Australia, Queensland, Western Australia, Tasmania and New Zealand, at the B.M.A. Building, 30 to 34, Elizabeth Street, Sydney, on August 25, 1926.

The delegates nominated at meetings of surgeons and specialists in the Australian States and New Zealand, who had signified their consent to act as provisional foundation members of an Australasian college of surgeons were: Professor F. P. Sandes, Dr. R. B. Wade (New South Wales), Sir George Syme, Dr. A. L. Kenny (Victoria), Dr. H. S. Newland, Dr. Bronte Smeaton (South Australia), Dr. W. N. Robertson, Dr. J. Lockhart Gibson (Queensland), Dr. H. S. Stacy as proxy (Western Australia), Dr. D. H. S. Lines (Tasmania), Dr. W. E. Herbert (Wellington, New Zealand), Dr. R. Gordon Craig, as proxy.

On the motion of PROFESSOR F. P. SANDES SIR GEORGE SYME was appointed Chairman.

On the motion of DR. W. N. ROBERTSON and DR. R. B. WADE, DR. A. L. KENNY was appointed Secretary.

SIR GEORGE SYME outlined the history of the development of the idea of a college of surgeons for Australasia from its proposal by Dr. L. Barnett at the last session of the Australasian Medical Congress, Brisbane, 1920. He explained how surgeons who had retired or were close to their retirement from practice, had arranged to invite surgeons and

specialists holding hospital appointments or of indisputable standing in the profession to attend meetings as provisional foundation members to aid in the preliminary steps for the foundation of the college. He then read the business paper issued to delegates for the meeting (dated August 12, 1926) signed by F. P. Sandes, R. B. Wade, G. A. Syme, H. S. Newland.

PROFESSOR SANDES inquired what was actually the condition necessary for the foundation of the college. Was it the framing of a constitution or was it the selection of a number of men to form a college? If a constitution were the first thing formed, then the men selected for membership might not agree to subscribe to it. If the men elected devised the constitution, it would be possible to get along more quickly. To constitute a college meant a definite procedure to accomplish a concerted act. To form a constitution might hang up the movement indefinitely. *Collegium* meant a number of persons who could deliberate together.

SIR GEORGE SYME said that all present had agreed to become members of the body and therefore it was competent for them to form a constitution; other members might decide whether or not they were willing to accept it. If they accepted they would be willing and prepared to sign a pledge and to form a constitution. In the earlier stages the provisional members in Sydney had had legal advice from Dr. Todd and the provisional members in Melbourne had been advised by a solicitor. The college could be promoted as a company under the *Companies Act* of one of the States, there being no Commonwealth companies act (the American College of Surgeons was registered in the State of Ohio). It might obtain a Royal charter for which a completed constitution would have to stand against the criticism of the existing Royal Colleges of Surgeons of England, Scotland and Ireland; the constitution when chartered was unalterable. When the college had been in existence for a few years, it might be found possible to frame a definite constitution that could stand without alteration and then a Royal charter might be sought. Incorporation involved difficulties because of the great differences in the *Companies Acts* in the Australian States and in New Zealand. The legal advice obtained in Melbourne suggested a purely voluntary association with a pledge, such as an *exordium*, binding the signatory to obey its laws.

PROFESSOR SANDES read a letter from himself to Dr. H. B. Devine, dated August 8, 1926, and Resolution 4 from report of Sydney committee meeting of June 1, 1926.

PROFESSOR F. P. SANDES and DR. W. E. HERBERT moved:

That this meeting of delegates should, before considering the question of a constitution, select from the names submitted by the meetings of provisional foundation members those who should be the founders of the College of Surgeons of Australasia.

Dr. Herbert would like Dr. L. Barnett, of Dunedin, who was travelling abroad, to be the first to sign. Dr. Herbert would also like to take over the thoughts and deliberations of the delegates to the men in New Zealand.

DR. B. SMEATON supported the motion, partly to represent the views of meetings in the States. South Australia was unanimously in favour of the college, but there was not in South Australia the same necessity for its formation as they were informed existed in other States. He thought it a pity that they were not able to form the college within the British Medical Association, because members had been taught to be answerable to their Branches. It would be unduly hastening things to go further than Professor Sandes had suggested.

DR. R. B. WADE thought there was a very great deal in what Professor Sandes had said. He did not think that the delegates had been chosen as the most suitable persons to be original foundation members. The foundation members should be men retired from practice, who were past considering personal advantage and consultants to hospitals. He would not be an original foundation member himself. But if such a system of selection were rigorously carried out, there would be an endless dragging out of the formation of the college because of the natural loss of energy in such persons. He thought that there were



greater prospects of attaining finality of working. Older men as original foundation members might be unable to meet and therefore there would be delay in the foundation.

DR. W. N. ROBERTSON reported that the majority of the surgeons and specialists in Queensland favoured the proposal; two were divided and one of these (their oldest surgeon) was very keen on foundation by the British Medical Association. Dr. Robertson saw that there would be trouble in working it through the British Medical Association. Every member of the British Medical Association would naturally feel that he had a right to membership of the college. It was a question as to whether it would be better to get a large number of men from the States or a few senior men to draw up a constitution and form a college. Queensland had no retired surgeons.

PROFESSOR F. P. SANDES said that Melbourne had two retired surgeons who had worked energetically in the college proposal; there were none to do this in Sydney.

DR. A. L. KENNY had no fear that the British Medical Association in Australia would regard the formation of the college as being in any way hostile to itself. The men present at that table were eloquent testimony that nothing opposed to the interests of the British Medical Association would be contemplated for a moment. Much work had been done in the attempt to frame a constitution at the Melbourne meetings and legal advice had been taken. If no such work had been done, he could agree with Professor Sandes's motion. Those at the meetings in Sydney and Adelaide had also devoted much time to the constitution.

DR. J. LOCKHART GIBSON was satisfied that the college should be formed from without the British Medical Association, otherwise every member of the Association would expect to be a member of the college.

DR. H. S. STACY thought that the delegates should form a constitution and put it before the governors.

DR. D. H. E. LINES reported that the movement had the whole-hearted support of the profession in Tasmania. He was inclined to support Professor Sandes's motion.

The motion was carried.

SIR GEORGE SYME suggested the number of founders should be small to facilitate work. Would the delegates prefer proportional representation on a civil population or a medical population basis? Or would they rather choose the most suitable men apart from representation of the States.

DR. W. E. HERBERT said New Zealand would prefer a representation on the basis of population (New Zealand one and a half millions and Australia six millions). They thought that would be seven for New Zealand, but they asked for six. It would help them very much in New Zealand to have six.

Before going further, SIR GEORGE SYME intervened, urging that it would be wise to ascertain if the name proposed, namely, "The College of Surgeons of Australasia," would be satisfactory to the New Zealand members or would the New Zealand members prefer "The College of Surgeons of Australia and New Zealand"?

DR. W. E. HERBERT for New Zealand expressed agreement with the proposal that the name of the proposed body should be "The College of Surgeons of Australasia," Australasia including New Zealand.

On the motion of DR. W. E. HERBERT and DR. W. N. ROBERTSON it was resolved:

That the name of the proposed association of surgeons should be The College of Surgeons of Australasia, fellows being designated by the letters F.C.S.A., the letter A including New Zealand.

PROFESSOR F. P. SANDES and J. LOCKHART GIBSON moved:

That the total number of founders of the college of surgeons of Australasia should be forty.

DR. W. E. HERBERT supported the motion.

DR. H. S. NEWLAND and DR. B. SMEATON moved as an amendment that the number be twenty-five including six for New Zealand.

The amendment was lost and the motion was carried.

On the motion of DR. R. B. WADE seconded by DR. W. N. ROBERTSON it was resolved:

That the representation be as hereunder:

New South Wales .. .. .	10
Victoria .. .. .	10
South Australia .. .. .	5
Queensland .. .. .	5
Western Australia .. .. .	2
Tasmania .. .. .	2
New Zealand .. .. .	6
Total .. .. .	40

It was resolved that the following be elected representatives:

#### NEW SOUTH WALES.

- |                      |                              |
|----------------------|------------------------------|
| 1. A. J. Brady.      | 6. Sir Alexander MacCormick. |
| 2. William Chisholm. | 7. Frank Antill Pockley.     |
| 3. C. P. B. Clubbe.  | 8. F. P. Sandes.             |
| 4. R. Gordon Craig.  | 9. E. T. Thring.             |
| 5. Thomas Fiaschi.   | 10. Ralph Worrall.           |

#### Emergency:

- |                  |                    |
|------------------|--------------------|
| 1. G. H. Abbott. | 2. C. E. Corlette. |
|------------------|--------------------|

#### VICTORIA.

- |                       |                         |
|-----------------------|-------------------------|
| 1. Sir James Barrett. | 6. Reginald Morrison.   |
| 2. F. D. Bird.        | 7. D. Murray Morton.    |
| 3. H. B. Devine.      | 8. R. Hamilton Russell. |
| 4. A. L. Kenny.       | 9. Sir George Syme.     |
| 5. Felix Meyer.       | 10. B. T. Zwar.         |

#### NEW ZEALAND.

- |                        |                        |
|------------------------|------------------------|
| 1. H. Ackland.         | 4. Sir Donald McGavin. |
| 2. L. E. Barnett.      | 5. Carrick Robertson.  |
| 3. Sir Lindo Ferguson. | 6. D. S. Wylie.        |

#### SOUTH AUSTRALIA.

- |                   |                   |
|-------------------|-------------------|
| 1. A. M. Cudmore. | 4. H. S. Newland. |
| 2. Anstey Giles.  | 5. T. G. Wilson.  |
| 3. A. M. Morgan.  |                   |

Emergency: Bronte Smeaton.

#### QUEENSLAND.

- |                        |                     |
|------------------------|---------------------|
| 1. Donald Cameron.     | 4. E. S. Jackson.   |
| 2. G. P. Dixon.        | 5. W. N. Robertson. |
| 3. J. Lockhart Gibson. |                     |

Emergency: E. T. Ahern.

#### TASMANIA.

- |                    |                 |
|--------------------|-----------------|
| 1. D. H. E. Lines. | 2. John Ramsay. |
|--------------------|-----------------|

#### WESTERN AUSTRALIA.

- |                  |                  |
|------------------|------------------|
| 1. F. A. Hadley. | 2. W. Trethowan. |
|------------------|------------------|

A MEETING of the provisional committee of The College of Surgeons of Australasia was held on August 26, 1926, SIR GEORGE SYME in the chair.

THE SECRETARY read a cablegram from Sir Donald McGavin nominating Dr. R. Gordon Craig as second representative for New Zealand.

It was decided to frame a constitution. The provisional constitution formulated by the meeting in Melbourne on July 12, 1926, was taken as the basis. This was taken in conjunction with the reports of the meetings held in Adelaide on August 9, 1926, and in Sydney on June 1, 1926.

#### The Constitution.

It was resolved that the following constitution be adopted:

1. That the name of the proposed association of surgeons should be "The College of Surgeons of Australasia."

2. That members of the College be designated as fellows and be entitled to place after their names the letters F.C.S.A.:

F being Fellow;

C being College;

S being Surgeons;

A being Australasia, which includes New Zealand.

3. That the College of Surgeons of Australasia should be a voluntary (that is not incorporated under a *Companies Act* or under a Royal charter) association.

4. That the objects of the College should be:

- (a) To cultivate and maintain the highest principles of surgical practice and ethics,
- (b) to safeguard the welfare of the community by indicating that its fellows have attained a high standard of surgical competency and are of high character,
- (c) to educate the public to recognize that the practice of surgery demands adequate and special training,
- (d) to promote the practice of surgery under proper conditions by securing the improvement of hospitals and hospital methods,
- (e) to arrange for adequate post-graduate surgical training at universities and hospitals,
- (f) to promote research in surgery,
- (g) to bring together the surgeons of Australia and New Zealand periodically for scientific discussion and practical demonstration of surgical subjects,
- (h) to do all other things that may help to the better achievement of these objects.

5. That the qualifications for fellowship shall be such special training in surgery and such standard of conduct as shall be considered satisfactory by the governing body under the by-laws of the College.

#### The Foundation of the College.

It was resolved:

That the *exordium* prepared by Professor Sandes be submitted to a solicitor to be put into suitable legal form with a final paragraph committing the signatory to the acceptance of any penalties for the infraction of the *exordium* as remodelled that may be inflicted upon the signatory by the governing body under its by-laws, for example expulsion or lesser penalties.

On the motion of DR. W. N. ROBERTSON, seconded by PROFESSOR F. P. SANDES it was resolved:

That Sir George Syme, Hamilton Russell, H. B. Devine and A. L. Kenny be and are hereby appointed a provisional executive to take the necessary steps to found the College and that Sir George Syme be Provisional President and Mr. A. L. Kenny Provisional Secretary and Treasurer of the Provisional Executive.

On the motion of DR. GORDON CRAIG, seconded by PROFESSOR F. P. SANDES it was resolved:

That the annual subscription be five guineas.

On the motion of DR. GORDON CRAIG, seconded by DR. W. N. ROBERTSON it was resolved:

That the forty foundation members be advised of their election and of the amount of the annual subscription and informed that if they accept fellowship, they are requested to send five guineas to the Provisional Secretary and Treasurer without delay.

On the motion of PROFESSOR F. P. SANDES, seconded by DR. GORDON CRAIG it was resolved:

That the forty surgeons and specialists enumerated in these minutes as being elected to represent the States and New Zealand shall be called Founders of the College.

On the motion of DR. W. N. ROBERTSON, seconded by PROFESSOR F. P. SANDES it was resolved:

That the Council to be elected by the Founders of the College shall be chosen irrespective of the States, say ten in number, determination of this number to be left to Provisional Executive.

#### Exordium.

The following are the terms of the *exordium* to which the founders of The College of Surgeons of Australasia have attached their signatures:

Whereas it is advisable, in the interests both of the peoples of Australia and New Zealand and of those who practise the profession of surgery in these countries, that:

- (i.) the high traditions of that profession should be upheld and developed,
- (ii.) the intensive study of the science and art of surgery and the extension of surgical knowledge by means of research should be promoted,
- (iii.) facilities should be provided for the higher education and advanced technical training of surgeons and surgical specialists,
- (iv.) a high standard of moral conduct should be demanded from all who accept the responsibilities of a surgeon, in their relations with patients and members of the medical profession,
- (v.) the public should be educated to recognize that the practice of surgery demands adequate and special training,
- (vi.) the standards of surgical practice in hospitals should be elevated,

Now, we, the undersigned, of our own free will, bind ourselves together for the fulfilment of the aforesaid objects and hereby form ourselves into The College of Surgeons of Australasia; and we pledge ourselves to obey all such by-laws, regulations and ordinances as may be adopted from time to time by the College or by its governing body or duly delegated authority and we will submit to any penalties, including that of expulsion from the College, that may be imposed by the College or by the governing body, for violation of any of the said by-laws, regulations or ordinances.

#### Books Received.

A TEXT-BOOK OF MIDWIFERY FOR STUDENTS AND PRACTITIONERS, by R. W. Johnstone, C.B.E., M.A., M.D., F.R.C.S.E., M.R.C.P.E.; Fifth Edition; 1926. London: A. and C. Black, Limited. Crown 8vo., pp. 536, with illustrations. Price: 15s. net.

THE NATURAL PROCESSES OF HEALING IN PULMONARY TUBERCULOSIS, by Marc Jaquero, M.D., translated by J. Denny Sinclair, M.B., Ch.B. (St. Andrews); 1926. London: Baillière, Tindall and Cox. Royal 8vo., pp. 108, with X ray illustrations and diagrams. Price: 6s. net.

#### Diary for the Month.

- JAN. 25.—New South Wales Branch, B.M.A.: Medical Politics Committee.  
 JAN. 26.—Victorian Branch, B.M.A.: Council.  
 JAN. 28.—Queensland Branch, B.M.A.: Council.  
 FEB. 1.—Tasmanian Branch, B.M.A.: Council.  
 FEB. 2.—Victorian Branch, B.M.A.: Presentation of Balance Sheet, 1926.  
 FEB. 2.—Western Australian Branch, B.M.A.: Council.  
 FEB. 3.—South Australian Branch, B.M.A.: Council.  
 FEB. 4.—Queensland Branch, B.M.A.: Branch.  
 FEB. 8.—Tasmanian Branch, B.M.A.: Branch.  
 FEB. 8.—New South Wales Branch, B.M.A.: Ethics Committee.  
 FEB. 10.—Victorian Branch, B.M.A.: Council.  
 FEB. 11.—Queensland Branch, B.M.A.: Council.  
 FEB. 15.—Tasmanian Branch, B.M.A.: Council.  
 FEB. 15.—New South Wales Branch, B.M.A.: Executive and Finance Committee.  
 FEB. 16.—Western Australian Branch, B.M.A.: Branch.  
 FEB. 21.—New South Wales Branch, B.M.A.: Organization and Science Committee.  
 FEB. 22.—New South Wales Branch, B.M.A.: Medical Politics Committee.

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